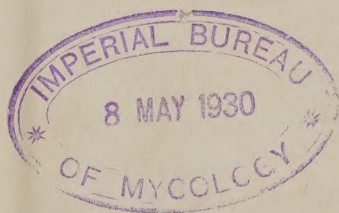


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Trade with Java

New Australian-Java Service.—

Two new 18,000 ton turbine steamers, the "Nieuw Zealand" and the "Nieuw Holland," have been added to the fleet of Paketvarte Maatschappij Co., of Amsterdam. The vessels will be employed on the Australian-Java route, and a large proportion of the cargo in each vessel has been given over to the carriage of chilled and frozen produce, a total of 63,000 c. ft. being available in six compartments. The main refrigerating plant is located in a separate room aft of the main machinery space. Cooling is effected by brine circulation, and two electrically driven ammonia compressors are provided, together with two condensers and two water-circulating pumps. An elaborate system of electrical and mercurial automatically recording thermometers has been installed for checking the temperatures in different parts of the refrigerated chambers.—"Imperial Food Journal."

The "Esperance Bay" arrived in London on November 9, with 6,401 boxes of Australian Oranges. The total shipments of Australian Oranges to London during 1927, was only 2,736 boxes and 50 trays.

Science and Agriculture.

Remarkable Achievements in Increasing Production and Defeating Insect Pests and Fungoid Diseases.

How Bordeaux Mixture Was Discovered.

(By Sir John Russell, Director Rothamsted Experimental Station, England.)

Science and Cultivation.

WE NOW TURN to another manner in which the scientist has helped the farmer—in the cultivation of the land. This involves two groups of factors, machinery and the soil. In some soils the implements will go through easily, in others with more difficulty. The factor of friction has been studied extensively, and methods have been discovered for reducing it. The power consumption in ploughing land treated in different ways is measured at Rothamsted by a dynamometer; it can be reduced by applying farmyard manure, which decomposes and produces something which enables the plough to get through the land more easily than it would otherwise do. The reduction in power may be as much as 20 per cent. of the cost of cultivation—at present one of the most expensive processes on the farm. Through the use of the dynamometer it is possible to draw maps of the fields at Rothamsted, showing the amount of pull which has to be exerted to draw the plough through in various parts. Some parts require 1,500 lb. pull for a two-furrow plough; other parts require only 1,400, and so on. To the eye the field would appear even, but the dynamometer reveals these variations. Calcium carbonate, like farmyard manure, lowers the draw-bar pull, and makes cultivation easier and cheaper, especially when the soil is suitably moist. The 1,500 lb. may be reduced to 1,250. This will be discussed more fully in the next lecture.

Improving Implements.

Besides altering the condition of the soil, it is possible to alter the implements, and a good deal of work on this subject is being done at present, both by engineers and soil physicists. Probably some of the greatest developments in agriculture in the next 50 years will be made in connection with tillage and tillage implements. One way in which the implement can be improved is by the use of rotary motion. As you know, the internal combustion engine used for traction is really an engine for turning a wheel round, and not for pulling something along. We, however, use it as if it were a horse. Its proper motion of turning is converted into pulling. There is no reason why that rotary motion should not be applied straight to the cultivating machine, and, in point of fact, a rotary cultivator has been made which has been tried at Rothamsted with promising results. The implement, instead of being dragged along simply works itself along; its tines or hooks tear a way through the soil. There is another interesting possibility which has not yet emerged from the laboratory. It has been shown that a metal plate

put into the soil or into a sticky substance such as gelatine, and electrified so that there is a difference of potential between the plate and the substance, becomes coated with a film of moisture which gives good lubrication. In laboratory tests the reduction in friction obtained when a ploughshare is kept electrified has been as much as 70 per cent. The tractor generates the current without difficulty, and it can be transmitted to the ploughshare; there are certain difficulties still in the way, but there is no reason why they should not be overcome. Science has opened up the possibilities; it remains for the practical difficulties to be surmounted.

Evolving Wheat Varieties.

Science has further helped farming by producing many new varieties of crops. When a townsman speaks of wheat, he may think of it as a certain definite thing, but a farmer knows that there are very many varieties of wheat, and a variety suitable to one set of conditions is not necessarily suitable to another. Consequently all over the world plant breeders are producing and selecting varieties of wheat, and are testing them out to find the conditions under which they will do best; and in any given area new varieties are being tried to see if any is better than those now in use. The work of Farrer in Australia is classical; and it is in this manner that the problem of drought is being met.

I came across a very interesting illustration on my way out to Australia. I was visiting Palestine and found that the agricultural experts were testing new varieties of wheat and seeking for something better than they already had. Among these were certain Australian varieties known to be rust-resistant and of good quality; like most of the Australian wheats they were smooth-eared and without any beards, and they grew well. However, they had one defect, they were stripped bare by the Palestine birds. The experts there set out to see what could be done about it. Their native wheats are not so much liked by the birds because of their stout beards, and so they are now busy cross-breeding so as to put the long bristly beards of the native wheats on to the smooth, beardless, Australian wheats.

This increase of production in plants by breeding is being applied not only to wheat, but to other plants as well. Professor Stapledon, who recently visited Australia, is achieving good results with grasses. This plant breeding work is never-ending, for varieties should not be continued too long; there should always be some new sort under trial. Potatoes, in particular, need con-

stant study; old varieties are apt to be badly affected by virus diseases as may be seen in Tasmania to-day.

Further, a type which has done well in one place, may do badly in another. Marquis wheat, the great triumph of Canadian experiment, is not successful in Australia, nor are the new English sorts. Each region has to do its own breeding and selection. In the development of the wheat belt of Western Australia, the constant production of suitable sorts is likely to play an important part.

Effects of Diseases Minimised.

Another way in which science has assisted is by reducing the waste due to plant diseases, of which there are unfortunately a great and increasing number. As transport becomes more efficient, so plant diseases are carried all over the world. If a new one is recorded in South America, for instance, it is not very long before it is reported from other parts of the world. Further, as crop production becomes more intense, there is a tendency for disease organisms to multiply. The wild wheat which grows on the hills of Palestine does not get "rust," but when it is cultivated it does. The most destructive crop disease in the history of mankind has been the ordinary "Irish potato blight" (*Phytophthora infestans*). This is a native of South America, and it did not reach Europe until steamships began to make the journey from South America in such short time that they could carry vegetable products. About 1840 it got into Ireland, and swept the country with all the vigour of a new pest, destroying the potato crop on which the peasants lived, reducing them to starvation so that thousands died in the famine which followed. For 40 years Ireland was never free. Once the disease appeared the farmer was helpless. Nothing could be done. Of all the tyrants Ireland ever had the potato disease was the worst. It cost thousands of lives, untold suffering and misery, and millions in money. Then, after 40 years, science found a remedy, and the blight has never caused serious trouble since. A simple operation, spraying with Bordeaux mixture, avoided all the trouble.

The discovery of this is interesting. In the south of France Grapes were grown for wine making, but the crops were subject to a great deal of pilfering by small boys. There was no way of dealing with them; fences were no use. It occurred to one of the vinegrowers that he could make an evil-looking jelly by mixing copper sulphate and lime, and he sprayed this on the Grapes, covering them with a sticky-looking green mass, which the boys would not touch. He had been troubled with mildew, and he found that the Grapes sprayed to save them from the boys were also proof against the mildew, and so other growers took up this spraying for the double purpose. Meanwhile men of science were studying potato blight, and they discovered that it was due to a fungus having certain characters in common with the mildew on vines. It appeared, there-

fore, that the same spray might save the potatoes. Experiment showed that this was so; the cause and the remedy were discovered. Nowadays we cannot afford to wait so long, and when a disease appears, no matter how slightly, scientists immediately begin to study it before it becomes acute.

Defeat of Potato Wart.

Another troublesome disease, much more recent, is the wart disease of potatoes. This appeared in one corner of England about 1896. No one thought much about it, but it spread all over the country, and threatened terrible destruction. Once in the ground it survived for a long time—certainly for 15 years, and probably longer. But this time the scientific workers were ready. Some were looking for a remedy and some for resistant varieties. Happily an observant inspector saw in a field suffering from the wart disease one potato plant standing up quite healthy. Its tubers were saved, and from them others propagated. The progeny remained immune, and a great number of varieties have now been developed as proof against the disease. The result has been that this disease, which might have been a catastrophe, has been only a nuisance, causing nothing like the loss of the old one. To-day we are threatened with mosaic of virus diseases. These affect many, perhaps all, crops, and they are spreading everywhere. They are already troublesome in Western Australia, in Tasmania, and in Queensland, but they are being closely studied by experts all over the world, and there is now for the first time a co-operative effort to cope with them. The plant pathologists are collaborating in a manner never achieved before, and, although the problems are difficult, there is every confidence that they will be satisfactorily solved. An entomologist would be able to tell a fascinating story of insect pests which were formerly dangerous, but have been brought under control by cultural methods, by sprays, or, most remarkable of all, by parasites.

What One Grain of Wheat Achieved.

The method of avoiding plant diseases by means of resistant strains has been used with great effect in Canada, where the introduction of Red Fife wheat caused great prosperity and development and added almost untold riches to the Dominion. A farmer was growing wheat in the west of Canada and suffering severely from rust, as were his friends. Being naturally averse to losing money in this way, he sent to Scotland for some new varieties. His friends there sent him out six or seven kinds, all of which rusted just as badly as the other wheat, but among them there was one single wheat plant different from the rest. It ripened earlier, and did not get the rust. He saved the grain, sowed it separately next year, when it again ripened early, and free from rust. This seed attracted much attention. He called it Red Fife, and in course of time it became the wheat grown throughout Canada. No one knows to this day where that grain came from,

because it was entirely different from any grain grown in England or Scotland. There is a similar variety in Eastern Europe, and it has been supposed that the ship which carried those six or seven parcels had called in at the Baltic port of Danzig, and took on wheat from Silesia. This was perhaps one of the most fortunate accidents in the history of agriculture, but the Canadian farmers had to wait more than 40 years for it, during which time they suffered much loss. About 40

years later Canada had almost equally good fortune in the accident that saved Marquis wheat—a wheat produced by Dr. William Saunders' sons, left in the experimental plots, and then rediscovered by Charles Saunders. However, Canada is too wise to depend on mere fortune, and has set up an efficient system of experiment stations where agricultural problems are studied scientifically.

(To be continued.)

Fumigation of Fruit and Seeds

Success of Vacuum Process.

According to a statement attributed to Director Hecke of the California State Department of Agriculture (and republished from "The Murray Pioneer"). "The California vacuum fumigation methods of controlling insect pests, worked out largely through the efforts of Dr. D. B. Mackie, of this department, has proved so exceptionally satisfactory that this type of fumigators is now being installed in most of the fruit growing countries of the world.

"One of the first foreign entomologists to recognise the value of the vacuum fumigator was Paul Marchal, entomologist of the Republic of France. His assistant, P. Vassierre, attending the International Entomological Congress at Ithaca, New York, this month, will there further discuss with Mr. Mackie the latest developments in vacuum fumigation, prior to installation of new plants in that country.

"In Mediterranean countries, Spain and Italy have asked for information, while Morocco, under the guidance of P. Regnier, is considering the immediate installation of a series of plants. That farmers in the African colonies are awake to the importance of protecting their interests is evidenced by the fact that the Union of South Africa, Portuguese East Africa and Kenya Colony have all investigated this method of pest control and established one or more fumigation plants.

"The largest plant in the world has been established at Guadalajara, Mexico, and preparations are now in progress for the establishment of three additional plants at Matamoros, Torreon and Juarez. Letters have come from India, Germany, Russia and Canada, from New Zealand, Australia, Hawaii and Phillipine Islands, and the three latter countries have already installed plants. During the past month requests were received from the governments in settling the problem of a proposed embargo against Chilean potatoes on account of the presence of three species of

potato weevils in the latter country. Cuba is a strong advocate of vacuum fumigation, having originally taken up the matter for control of the pests of tobacco.

"Requests for information on the subject of fumigation are constantly being received from points in the United States and from the Federal Horticultural Board. Judging from the number and character of these communications, the California Department is now the clearing-house for vacuum fumigation information, not only for the United States, but for nearly all parts of the world."

IMPORTED DATES.

New Fruit Pests Also Imported.

Strong comments were made in the Victorian Parliament in December because, in a consignment of 35,000 cases of Dates, some new insect pests were noted. Only a very small percentage of the imported Dates were sterilised by fumigation.

Popularity of Paper Mulch Increasing in America

New Type of Paper Patented.

Experiments Bring Good Results.

IN the September issue of the "Fruit World," an article appeared that caused considerable interest to growers generally. The article described the use of paper mulch as a weed eradicator and promoter of larger crops.

Four years' experimental work in America and Hawaii has proved the value of the new innovation, and ninety per cent. of the Hawaiian Pineapple crop is now grown under the paper mulch plan.

The paper mulch experimentation continues to spread in America, states the "Seed World," and, as a result, a number of paper mills are concentrating on practical inventions to speed up the growth of plants "under paper."

One mill has produced a paper that will advance crops two weeks, under

favorable circumstances. This paper consists of an upper and lower layer of wrapping paper, with a central layer of asphalt-coated paper, which acts as a binder, and prevents penetration of moisture. The patented feature lies in the fact that this paper will not only retain moisture in the ground to assist the growth of the plant, keep down weeds like other mulching paper, but will add to the natural accretion of moisture in a special manner. This is how it is done:—

A roll-machine cuts converging slits in the paper, forming little triangular tabs, or flaps, similar to those in the pasteboard stoppers of cream bottles, in the latter case, the tab being picked up with some sharp instrument to form a handle with which to lift it out of the bottle. In the case of the mulching paper, however, the tabs are left flat, as cut; but after the paper has been laid, the action of rain on it, forces down all the many little tabs, which then become traps to hold the added moisture, because, as soon as the sun comes out, the tabs, by the action of its heat, automatically return to level, closing each tiny trap-door. The tabs, of course, as made in the paper by the machine, are spaced at regular intervals over the surface.

On either side of each seed row in the ground, a strip of this paper is placed—the usual widths of the rolls of mulching paper being from 24 to 48 inches—the edge of the paper being drawn close to the border of the seed row. When it is desired to set out plants under the mulch, holes are made mechanically along the central area of the paper, suitably spaced.

These methods—paper-edge to row-border, on both sides, for seeds; and general coverage with spaced apertures at desirable intervals along the central area of each strip of paper, for setting out plants, sprouts and vines are now in use in the case of any kind of mulching paper.

Good Results from Experiments.

The new patented paper has been tried out in the case of Beans, Beets, Tomatoes, and other vegetables, and crops have been produced two weeks ahead of their usual time.

Apple and Pear Grading Regulations

Alterations to Grade Standards

"Plain" Grade cannot be Exported after 1930

List of Varieties Prohibited from Export after 1930

AT a conference of State Supervisory Officers held at Melbourne in August last (convened by the Minister for Markets, Mr. Paterson) amendments to the export fruit grading regulations were drawn up.

The regulations are as follow:—

To come into force on January 1, 1929:—

The diameter of Apples and Pears is to be defined as the greatest transverse measurement of the fruit taken at right angles to the line joining the stem and the calyx.

Regulation 48 (c).—Normally small Apples in the standard grade of the minimum diameter of two inches bearing any signs of black spot fungus will not be allowed to be exported. The minimum diameter of Pears in this grade is to be reduced from 2½ to 2 inches.

Regulation 48 (d).—A further proviso to the plain grade is to be added to prevent exportation of Apples of the minimum diameter of two inches bearing any signs of black spot fungus. The minimum diameter of Pears previously omitted from this grade is to be two inches.

Regulation 61.—The whole of the trade description is to be applied to one end of the case. Provision is being made to enable either the size or number of Apples or Pears contained in each case to be included in the trade description. Apples or Pears of 3½ in. dia. shall be limited to fruit of less than 3½ in.. A new size of 3½ inches diameter will include fruit of that size or any greater diameter.

To take effect from January, 1930:—

Regulation 47 (b) is to be amended to make it compulsory for the ends of cases to be smoothly dressed.

To be operative from January 1, 1931:—

Regulation 48 (d) which relates to the plain grade for Apples and Pears is to be deleted from the regulations.

Regulation 61 is to be amended to provide for the inclusion in the trade description of the number of fruit contained in the case in place of the optional use of the size or number of fruit. (The inclusion in the trade description of the size or number will

be optional during the 1929 and 1930 seasons.)

The regulations are to be further amended as from January 1, 1931, to provide that the export of the following varieties of Apples shall be prohibited:—Alexander, Allington Pippin, Crow's Egg, Golden Pippin, James Grieve, Mobb's Codling, Prince Alfred, Peasgoods, Nonsuch, Winter Majetin, Hoover, Shockley, Trivett.

The following instructions have been issued by the officials administering the commerce regulations:—

Immature fruit will not be allowed to be exported. Inspectors should be instructed by the supervising officer to exercise the strictest supervision in order to detect immature fruit, particularly during the early shipments. All such fruit, which, in the opinion of the inspector, is likely to arrive in the overseas market in a deteriorated condition, should be rejected.

In view of the number of unsuitable cases submitted for export last season, the supervising officer should instruct inspectors to reject any cases made from unseasoned timber, or which are unsightly, undersized, stained, warped or split to an extent which in the opinion of the inspector would be detrimental to Australia's overseas trade. Early action should be taken by the supervising officer to notify growers and exporters that such unsuitable cases will not be permitted exportation, special mention being made in regard to cases made from unseasoned timber.

In order to prevent the exportation of fruit which has been prohibited exportation by proclamation, or which is not up to the standards prescribed in the regulations or which has been misdescribed, badly packed, or generally speaking, is unfit for export, it is desired that a serious view be taken in all instances where the regulations have been in any way contravened.

"TASMANIA INSULTED."

Statement by M.H.A.

"Tasmania had been insulted by the Commonwealth Government when the new fruit regulations were framed,

without reference to anybody in Tasmania." This is what Mr. J. P. Piggott told the Tasmanian House of Assembly recently.

"Tasmania," continued Mr. Piggott, "was the only State where the departmental officers were not permitted to inspect, although a Commonwealth officer was in charge."

Mr. Piggott told the Assembly that the Prime Minister had sent a letter recording proceedings of a conference in Melbourne, at which Tasmania was not represented. The letter contained many ludicrous statements, among which was a statement that the Argentine would be a serious rival to Tasmania on the London Apple market.

It was suggested that Crow's Egg be struck off the list of export Apples, when, as a matter of fact, that variety had often realised more than Sturmers. Then there was the suggestion that the case be changed, and the threatened deletion of the "plain" grade. He expected the Government to take definite action in the matter.

The Minister for Agriculture (Sir Walter Lee), in reply, regretted that the Minister for Markets had left Tasmania out of the conference, and that alterations of the regulations were made without consulting Tasmania. It was unfair that Tasmania should be singled out for dual inspection for overseas shipments.

"CANADIAN" BUSHEL CASE.

Queensland and Victoria hope N.S.W. Will Adopt it.

Mr. George Williams, director of Fruit Culture, Queensland, writes:—"It is recognised that the variations in design of the various cases used in interstate trade, could be made uniform with advantage to each State; for instance, the "Canadian" bushel case is accepted in Queensland and Victoria, but refused in New South Wales.

Mr. J. M. Ward, Superintendent of Horticulture for Victoria, expresses a similar desire. "It is a great pity," stated Mr. Ward, "that N.S.W. does not recognise this case, for it is a recognised Apple case throughout the Apple-growing world."

Harvesting, Storing and Ripening of Pears for Canning.

Time for Picking ··· Pressure Test for Determining Maturity ··· Storage Hints.

The following interesting article on the subject of harvesting, storing and ripening Pears for canning, contributed to "The Canner," by Mr. Henry Hartman, of the Oregon Agricultural Experiment Station, Corvallis, Oregon, will be found of great interest.

THE HANDLING OF PEARS for canning purposes does not differ materially from the handling of Pears for the fresh fruit trade. Any programme of harvesting, storing and ripening that will produce Pears which are juicy, fully flavored and of good texture, will generally meet the requirements of the canning industry. It is now recognised, however, that the ultimate commercial worth of Pears for any purpose depends largely upon the manner of handling. Probably no other fruit responds more readily to harvesting, storing and ripening treatments than does the Pear.

The present paper is based largely upon the results of experiments and field observations by the Oregon Experiment Station. Studies relating to the handling of Pears have been conducted by the Oregon Experiment Station since 1917, and have included such commercial varieties as Bartlett, Comice, Anjou, Bosc, Winter Nelis, Seckel, and Howell. This discussion, however, is confined entirely to Bartlett, since the canning trade is interested primarily in this variety.

A Pear, whether attached to the tree or whether in storage or in transit, is a living organism. It carries on life activities and its ultimate quality and length of life are dependent upon both external and internal factors. Consequently it must be treated as a living thing and not as a mere mass of dead or inert matter.

Time of Picking.

Casual observations and experimental evidence have emphasised the fact that the degree of maturity attained at picking time exerts a pronounced influence upon the dessert, canning and keeping quality of Pears. When picked prematurely, Pears are usually undersized, and may wilt considerably in storage. They lack in sweetness and flavor; when canned they yield a product that is more or less flat in taste. They are very sus-

ceptible to scald and usually break down rapidly after reaching prime condition. When picked too late, on the other hand, Pears ripen quickly and lack in juiciness. They are subject to core breakdown, and when canned, they are apt to be gritty in texture. The practice of leaving canning Pears on the trees until they turn yellow is now known to be wrong.

Determination of Maturity.

In the case of the Pear, one is confronted with the problem of determining time of picking long before the common indicators of maturity make their appearance. Size of fruit, color of seeds, ease of separation from the spur and even color of the skin are not definite indexes of time of picking in Pears. There is need, therefore, for a test of maturity that indicates rather definitely the degree of ripeness attained, and that can be easily and quickly applied.

Several tests of maturity for Pears were considered by the Oregon Experiment Station. The so-called iodine test was given a thorough trial, but proved to be unsatisfactory. The specific gravity test, used with Oranges and other fruits, likewise was unsatisfactory, and it soon became apparent that any test applicable to the Pear must be based wholly or in part upon "the physical rather than the chemical contents of the "cells," and of all the schemes tried, the so-called pressure test was the only one to give promise.

The Pressure Test.

This test is based upon the fact that during the growth the ripening of Pears, there is a gradual and consistent lowering of the physical resistance to pressure or wounding of the skin and neighboring tissue. In the case of Bartlett, for example, the decrease in resistance over an area one-half inch in diameter is close to one-half pound of two per cent. every 24 hours. To measure the changes in resistance, a simple apparatus now known as the "iron thumb" or pressure tester has been perfected. Portable types of pressure testers are now on the market. To make the pressure test useable, it is first necessary that tables giving the proper picking pressures be prepared. This usually re-

quires several seasons. The picking pressures now recommended for Bartlett in Oregon are based on ten years of observations.

Picking Pressures.

Bartlett, as grown in Oregon, attains its best quality when harvested at pressures varying from 32 to 26 pounds. This is with the Oregon tester, which has a plunger 7/16 of an inch in diameter, the test being made without removal of the skin. When the federal or Ballauf tester is used the desirable picking range is between 20 and 16 pounds. The test in this case is made with a plunger 5/16 of an inch in diameter and with the skin removed. From 10 to 12 representative specimens are necessary to give a fair pressure test. Three or four determinations are usually made on each specimen.

While the pressure test has proved to be a reliable index of time of picking in Pears, it is clear that this test is of little value unless used with reasonable care. It should be applied only by some one who has made a study of the factors involved. The best results have been obtained when the matter of testing has been left entirely to one or two responsible individuals.

Amount of Crop Affects Maturity.

With the general use of the pressure test, some interesting and valuable information has come to light. It has been found, for example, that there is a close correlation between the amount of crop on the trees and the maturity of the fruit. Invariably, the fruit from the heavily loaded trees, though usually smaller in size, is more mature than that from the lightly, or moderately loaded trees, the difference in time of picking amounting to as much as 12 days in extreme cases. This is significant, since in some districts Pears are still picked largely according to size. Obviously when this practice is in vogue, the less mature is often the first to be harvested.

Storage of Pears.

SINCE the Pear must be harvested while still in a comparatively green condition, it is apparent that storage must play an important role in the handling of this

fruit. Storage of some kind, in fact, is indispensable in the disposal of the Pear crop.

Undoubtedly the most important single factor relating to the storage of Pears is temperature. As with other fruits the rate of ripening in Pears, within certain limits, is increased by two or three times with each increase in temperature of 180 deg. F. This means that at 70 deg. F. Pears ripen approximately ten times as rapidly as they do at 32 deg. F. For long keeping, Pears should be stored at temperatures of 30 deg. to 32 deg. F. Pears do not freeze unless subjected to temperatures below 28 deg. F. for a considerable period of time.

Promptness of storage has material bearing on the successful handling of Pears. It has been shown with the Bosc variety, for example, that a delay of seven days at 65 deg. F. may be responsible for a reduction of at least 60 days in the possible cold storage life of the fruit. The length of time that Bartlett Pears can be held in cold storage depends largely upon the conditions under which they were grown, the time of picking, and the promptness of cooling. Usually the successful cold storage period varies from 25 to 40 days.

Pears wilt badly in storage unless they are kept at fairly high humidities. This is especially true of the early picked fruit. Relative humidities varying between 78 and 85 per cent. are usually sufficient to prevent excessive wilting.

Since Pears are very sensitive to odours they should not be stored with strong smelling products. The smells of vegetables, meats, etc., are readily absorbed by Pears, and may persist after storage to the extent that they are detectable even in the canned product.

Ripening of Pears.—Even though Bartlett Pears may be kept at 30 to 32 deg. F. for a considerable period of time, they do not develop their best quality unless they are removed from cold storage and allowed to ripen at comparatively high temperatures. Ripening temperatures varying between 60 deg. and 70 deg. F., are essential to the development of full quality in Pears.

Attempts to ripen Pears in cold storage are responsible for much of the spoilage that now occurs in the handling of this fruit. Pears scald, a physiological trouble characterised by browning and disintegration of the skin, is largely associated with this practice. When the fruit is removed to a warm room before yellow color appears, very little scald is encountered.

APPLES FOR EUROPE.

From U.S.A. and Canada.

A report of the Empire Marketing Board on the movement of Apples from U.S.A. and Canada to Europe, shows an increase in shipments to the Continent and a decrease in shipments to the United Kingdom. The report is dated October 31.

There is a decided increase in Apple shipments from Atlantic ports to the Continent of Europe as the following table shows:—

	United Kingdom.	Continent.
1926-7 ..	92 per cent. ..	8 per cent.
1927-8 ..	89 per cent. ..	11 per cent.
1928-9 ..	78 per cent. ..	22 per cent.

Total shipments up to date (September 1), from Atlantic ports to Europe, are 175,000 barrels, 485,000 boxes.

During one week in October, 1,030,000 boxes of U.S.A. and Canadian Apples were shipped to Europe. The greater portion of this cargo was for the United Kingdom.

The arrivals of South African Oranges during the past seven days have amounted to 80,000 boxes, but arrivals expected during the next seven days have amounted to 80,000 boxes, but arrivals expected during the next seven days, ending November 6, will total only about 22,400 boxes. Shipments of Oranges from Valencia have commenced, about 500 half-cases leaving last Saturday for London and 100 for Liverpool. A consignment of 6,000 boxes of Oranges is also on the way from Australia on the "Esperance Bay," which is due in London November 9.

Grapes from Almeria continue to reach this country in considerable quantities. Over 115,000 barrels arrived during the past seven days.

SOUTH AFRICA'S REMARKABLE PROGRESS.

As an illustration of the rapid growth of an industry, that of fruit-growing in South Africa undoubtedly calls for special comment, states "The Fruitgrower," London. Only ten years ago the exports of Peaches, Apricots, Grapes, Pears, Plums, Oranges, Grapefruit, etc., did not total more than 250,000 packages a year. In 1927 the total was just below 3,000,000 packages. To-day South Africa is able to supply fresh fruit to the markets of the United Kingdom throughout the whole year. From December to May Apricots, Peaches, Grapes, Pears, Plums, and other choice fruits are available; and then from June to November come

Oranges, Grapefruit, Naartjes (Tangerines), and Pineapples, which are really acceptable "summer fruits."

The fruit industry may as yet be said to be still in its infancy, and, according to the latest figures, both of orchards shortly coming into bearing and now being planted, it is confidently expected that the exports to the United Kingdom will be trebled in a few years from now. It will be appreciated that this wonderful achievement of the South African fruitgrowers has only been brought about by extremely hard work and close attention to quality, grading and packing. Their aim has been to give the British public value for money, and the fact that the exports to this country have increased by leaps and bounds certainly confirms their success.

POOR EUROPEAN FRUIT CROPS WILL BENEFIT AUSTRALIA.

Europe should prove a good market for Australian Apples next export season, judging by reports received of the poor Continental crops of Apples and Pears by the foreign service of the U.S.A. Bureau of Agriculture.

Recent reports from Continental producing districts and consuming centres indicate clearly that markets in Northern Europe will be considerably more dependent upon overseas fruit this winter than they were last year.

The Continental Apple and Pear crops, already less promising than those of a year ago, have suffered some further deterioration, and at the end of September gave definite indications of being relatively small. The quality of the fruit leaves much to be desired, and much of the stock is wormy.

Pears will probably be somewhat more abundant than Apples, with the best yields occurring in Czechoslovakia and the northern half of Germany close to the consuming centres, but they should exert no serious pressure on the Apple market for any length of time. Demand is generally good, and prices are firm or tending to rise in most markets.

American Apples are finding a good market with increasing prices in Germany, and reports from Copenhagen indicate firm prices.

The Canadian Apple crop is estimated to be 2,965,000 barrels. This is an increase of 5 per cent. over the 1927 crop.

Cool Storage In Australasia

COOL STORES' ASSOCIATION.

Quarterly Meeting.

AT the quarterly meeting of the Fruitgrowers' Cool Stores' Association of Victoria, on November 23, the President, Mr. W. Mock was appointed to represent the Association on the Victorian Employers' Federation. Mr. J. H. Lang reported progress of Pear Committee, and it was resolved that the Association recommend the adoption of a standard case for Pear export in the coming season. Preferably the half-dump, or six-inch bushel case.

The Secretary reported progress on pre-cooling Apples for export, and it was resolved that a Committee be appointed to keep in touch with this aspect of export, and report at the next conference.

The Committee appointed were:—Messrs. W. Mock, H. J. Willoughby, J. Hutchinson, W. Lipscombe, J. H. Lang, and T. W. White.

Apple Advertising Campaign.

The Secretary presented the report by the Chairman of the Apple Advertising Campaign Committee, outlining its activities. The report disclosed a large amount of publicity at a minimum of expense. The financial statement shows a balance in hand of £139.

The Association resolved to place on record its appreciation of the efforts of the Advertising Committee to dispose of the record holding of fruit in cool stores in a satisfactory manner, and that the balance of funds in hand be held in trust for future propaganda.

It was also resolved to convey thanks to the Agricultural Department and the Victorian Railways for their fine efforts in helping to dispose of the record Apple crop.

All-Australian Conference.

It was resolved that the Minister for Markets be requested to convene a conference of Australian Fruitgrowers on the lines suggested some time ago by the Victorian Fruit Council.

It was also resolved—

"That the State Treasurer be ap-

proached with a request that relief be granted to cool stores with regard to payments due in 1929."

"That a deputation wait on the State Treasurer to urge the foregoing resolution."

"That the Federal Department of Markets be requested to submit a draft of the proposed amended grading regulations to this Association before gazettal."

"That the shipping companies be approached with the view of minimising the rough handling of fruit on the wharves."

"The Narre Warren Cool Store be requested to supply figures relating to their fruit holding on the first of each month, in conformity with all other affiliated stores."

"That the congratulations of this Association be tendered to the Hon. A. E. Chandler, M.L.C., Minister for Public Works."

"That the thanks and appreciation of fruitgrowers be tendered to Mr. J. Cain, M.L.A., for his efforts on behalf of the industry during his term as Assistant Minister for Agriculture."

"That the Secretary write to the Migration Commission, requesting that Mr. A. D. Shamel, plant physiologist, U.S.A. Department of Agriculture be invited to visit Victoria."

"That the Minister for Agriculture be requested to retain the services of Mr. C. C. Brittlebank, biologist for a further term."

Messrs. Bender & Co., Launceston, were admitted to the Association, and Mr. J. W. Bailey's resignation was accepted.

Congratulations were extended to Mr. J. G. Aird, on his appointment as a Justice-of-the-Peace.

It was decided to request the Melbourne "Herald" to republish, in pamphlet form the series of articles contributed by Mr. R. E. Boardman, while in America and England.

Representatives present at the meeting were:—Messrs. F. Moore and J. Stevens (Blackburn), F. Thomas (Bunyip), W. Mock, G. Fankhauser and J. Stevens (Burwood East), H. L. Tomkins, H. R. Chandler, Jenkins and W. Lipscombe (Croydon), R. M. Finlay (Diamond Creek), J. J. Tully

(Doncaster Central), J. H. Lang (Harcourt), J. M. Watt (Hastings), T. E. Butler (Narre Warren), J. J. Tully, A. Thiele and F. Petty (orchardists), T. E. Butler (Pakenham, Red Hill, Somerville and private stores), W. Mackinlay, J. W. Barrett and H. Thatcher (Ringwood), T. W. White (Somerville), H. J. Willoughby and J. Hutchinson (Tyabb), C. Wallace and H. Thatcher (Wantirna), W. Lipscombe; J. W. Aspinall (Metropolitan Association), and J. G. Aird, Secretary.

"Soggy Breakdown" of Apples.

A Cold Store Fruit Disease.

At the Agricultural Experiment Station of Iowa State College, U.S.A., a long series of interesting experiments on the cause and condition of what has been termed "soggy breakdown" of Apples have been described in a bulletin issued from Iowa. The bulletin explains that soggy breakdown, although similar, is not identical with brown-heart. The former arises only in the cortex, and not inside the core line of the Apple. Soggy or spongy breakdown occurs only after a definite time interval in cold storage, at definite stages of maturing, or after certain periods of delayed storage.

This disease, the bulletin adds, which was previously noted by Plagge, the writers believe to be the same as the "internal breakdown" reported in England by Kidd and West, and in New Zealand by McClelland and Tiller. As the disease occurs prematurely, and always at temperatures below a certain level, it is considered different from the breakdown occurring as a result of senility. Although the disease is somewhat similar to internal browning reported chiefly on Yellow Newtown as grown in the Pajaro Valley in California, it is not identical.

This type of breakdown has, therefore, been termed "soggy breakdown" in order to distinguish it clearly from the so-called "internal breakdown" or "physiological decay." The writers have also adopted the term "mealy breakdown" for the latter to distinguish it from soggy, or spongy, breakdown.

Experimental results for three years have shown that soggy breakdown is caused by low storage temperatures, which, however, are not sufficiently low to cause freezing injury. It has been found that Grimes which have been held in common storage houses

or at slightly higher temperatures than those usually recommended for cold storage have kept considerably longer than the fruit held at the usual cold storage temperatures. Grimes stored at 30 deg. to 36 deg. F. kept much more satisfactorily with respect to soggy breakdown, eating quality and sale value, and were superior to Grimes stored at 30 deg. and 32 deg. F.

While low temperature was found to be the main causal agent of soggy breakdown, other contributing factors have considerable influence.

Maturity at harvest time and delayed storage at ordinary temperatures have affected the development of the disease. Fruit picked at the beginning of the harvest was found to be more susceptible with delayed storage treatment than when stored immediately; while fruit picked at the close of the harvest season was found to be more susceptible with less delay before storing. Apparently Apples may become peculiarly susceptible to soggy breakdown when the storage temperature is lowered below a certain level after periods of exposure to rather high temperatures.

When the Grimes were placed immediately into cold storage at the temperatures of 30 deg., 32 deg., 34 deg., and 36 deg. F., soggy breakdown made no significant development during years when the fruit was picked at the beginning of the harvest season. When the fruit was delayed at ordinary orchard temperatures, the same seasons, soggy breakdown appeared abundantly at the two lower temperatures, while it was practically controlled at the two higher temperatures. At 30 deg. F. the amount of the disease present was in proportion to the amount of delay.

Exposing the surfaces of the fruit to free and forced circulation of the storage room atmosphere gave satisfactory results in preventing soggy breakdown during one storage season. This tends to support the hypothesis that the disease was caused by an accumulation of deleterious substances, with an accompanying increase in cell permeability, since the benefit derived from the air movement was likely that of removing these substances from the Apple tissue.

Permitting the fruit to have free access to air by placing it in open slatted crates during the delayed storage period did not reduce susceptibility to soggy breakdown.

The effect of gas absorbents, other than that of commercial oiled paper,

on the prevention of soggy breakdown, was not tried. Oiled paper gave no better results than unoled paper in a series of experiments on the control of soggy breakdown.

The development of soggy breakdown in Apples appears to be affected by locality, as locality may affect growth and maturity.—“Cold Storage.”

COLD STORED APPLES.

Success at Portland.

During December there was a display in the window of Law, Somner & Co., Swanston-street, Melbourne, of Hoover, Rome Beauty, and Delicious Apples, from the Gorae Cool Store, near Portland, Vic.

The display caused much favorable comment, and the directors of the Gorae Cool Store have been complimented on their success.

APPLES AND SCALD CONTROL.

Time of Picking is Vitally Important.

SCALD is one of the most serious diseases of the Apple, according to the United States Department of Agriculture, and has an important bearing on all market operations during the latter half of the Apple-storage season. From the middle of December till the close of the Apple season, one may find Apples offered at 10 to 40 per cent. discount on account of scald.

The disease is familiar to the dealer and the consumer, says the Department, but may be practically unknown to the grower. It does not usually appear until the crop has left the grower's hands, and has gone into commercial storage. Scald may appear during storage, but generally makes its most rapid development after the Apples have been moved to the warmer temperature of the market or the home. Nevertheless, says the department, it is highly important that the grower familiarise himself with the disease in order that he may do certain things to reduce the susceptibility of his crop to scald. A disease that makes such a sudden appearance at a time when Apples are ready for consumption naturally has a disturbing effect upon market conditions, resulting in decreased consumption, and a general handicapping of the industry. Such losses are

reflected to the grower by reduced returns for his crop.

Apple scald is not caused by parasites or fungus organisms, but is due to gasses which emanate from the Apple itself, which poison and kill the skin when the fruit is confined in closed packages or tight rooms. Seasonal and orchard conditions are involved, as well as those that prevail in transportation, in storage, and on the market. But the real remedy for scald in tight barrels, tight barrels, tight packages of any kind, or the nearly airtight cold storage rooms consists in case of wrapped Apples in adding 15 per cent. of an inodorous mineral oil to the paper wraps in their manufacture, and in case of barrels or other Apples not wrapped in mixing the same kind of paper, but in a shredded form, at the rate of one and one-half pounds distributed through the Apple barrel.

The time of picking is an important item within the control of the grower which affects the susceptibility of the Apples to scald. Early picked and poorly colored fruit is extremely susceptible, while well-colored, well-matured Apples are more resistant to the disease. Color and maturity are influenced by the weather conditions, the pruning, the soil, the fertiliser, and the general orchard management, as well as by the time of picking. Good exposure to sunlight produces high color and makes the Apples more resistant to scald.

It is important also that Apples be cooled as quickly as possible after picking, and delivered to the storage plant promptly. Many serious losses from scald are the after effects of delayed storage. Free exposure to air is often as important as low temperature, particularly during delayed storage. Storage in hampers, ventilated barrels, or baskets decreases the development of scald.

Try to care for something besides the gratification of selfish desires. Look on other lives beside your own. See what their troubles are and how they are borne.—George Eliot.

Because a man fails once or twice, don't put him down as a failure until he is dead—or loses his courage.

There is not too much compassion in the world after nineteen centuries of Christian cultivation.

Fruit at Every Meal in U.S.A.

Nation's Diet Changed by Advertising.

Remarkable Achievement by the "Sunkist" Citrus Organisation.

(By R. E. Boardman.)

HAVING standardised products, newspaper advertising has been used so effectively that the dietetic habits of a nation of 120,000,000 people have been changed to include fruit with every meal.

Advertising has transformed the fruit industry to a major national enterprise, and the goodwill of the people has been gained.

Advertising campaigns are conducted by the California Fruit Growers' Exchange (the "Sunkist" brand), Mutual Orange Distributors ("Pure Gold" brand), the Walnut Growers' Exchange, the Skookum Apple Packers' Association, and many others, including, of course, the large fruit-packing corporations.

Advertising has changed the dietetic habits of the entire American nation. Fruit now forms a part of every meal in hotels, cafes, on ships, and in the homes of the people.

Without adequate standardisation and organisation it would be impossible effectively to advertise. When the public is asked to "eat more fruit," the quality must be there, and the price must be right.

The Sunkist organisation has a special department for advertising, and spends about £200,000 a year in this way.

Does advertising pay? Here is the answer in a nutshell. During the past 19 years the total Orange and Grapefruit supply has practically trebled; the California supply has increased 70 per cent., while the population has increased only 33.7 per cent. This increased supply has been consumed without a corresponding decrease in price levels to the producers, which would have inevitably followed if consumer demand remained static.

Each Fruit Stamped.

Each Orange is marked "Sunkist" by an electrical process: this increases the effectiveness of national advertising, and insures the consumer against substitution. Nearly two billion Oranges annually are now marked "Sunkist."

The following interesting news items were supplied to me at the Exchange office:—

The market for citrus products is people, and the entire "Sunkist" advertising plan is designed to place the merits and uses of California Oranges and Lemons before as large and varied a percentage of the total population as possible.

Ninety-nine million individual advertisements, most of them in four colors, appeared in national magazines during the past season.

A special newspaper campaign on "Sunkist" Oranges for the Christmas holidays appeared in 73 cities during December.

Another series of advertisements featuring Oranges, in 220 of the principal daily newspapers of this country reached 16,000,000 people.

486,410,000 Advertisements.

Two hundred and seventy-five newspapers in America delivered 486,410,000 advertisements to consumers featuring Lemons in hot lemonade, and other 150,000,000 impressions featured Lemons in new year-round uses.

News articles, photographs and specially prepared material on the California citrus industry, were furnished newspapers and magazines to help these efforts.

To co-operate with the medical profession in a health campaign, over 2½ million bulletins were distributed to domestic science teachers and federal extension workers during the past year upon request.

One hundred and forty-four thousand, seven hundred and thirty-five dietetic bulletins were distributed to nurses' training schools and hospitals.

In addition, large quantities of child feeding and health literature were distributed to elementary schools.

Trade Co-operation.

No advertising programme, states the Exchange, is as effective as it should be without the full and intelligent co-operation of the trade. The 3,000 wholesale and 500,000 retail outlets for citrus fruits are vital factors in the successful marketing of the crop.

Good display, reasonable margins, and rapid turnover, are essential in the selling of fruit. It is upon these principles that the Exchange "dealer" service work is based. This branch of the advertising programme now represents an annual investment of 25 per cent. of the advertising appropriation.

An ingenious fruit juice extractor was patented and put on the market, but its price, including profit to the manufacturer, limited the sale. So the Exchange bought the rights, and now turns out the extractors at cost, their principle value being the huge quantities of fresh fruit which are thus used. There were, in 1927, 35,000 "Sunkist" extractors in use, using nearly two million boxes of fruit annually—this represents a volume of over 400,000,000 drinks, with a retail value (at 5 cents (2½d.), and 10 cents (5d.), a drink), of £8,000,000.

Later reports show that 42,000 extractors are being used.

NEWS IN BRIEF.

Pear and Cherry trees are failing in the Batesford, Geelong, district.

W.A. is harvesting a record crop of Apples. Growers have thinned heavily.

The Batlow packing house handled 140,000 cases of Apples this season. They urge better organisation for the export trade, and a revision of the grading regulations.

Apricot drying is dealt with in an article in this issue.

There are complaints in New Zealand regarding the costs of handling fruit in London.

South African fresh fruit export has increased 60 per cent. in the last five years.

European crops of Apples and Pears are poor this season. American Apples are making a good demand on the Continent.

The Hood River Apple crop (a competitor with Australia on the English market) is well up to standard this season. The Hood River Apple-growers' Association is an effective organisation.



CITRUS PACKING REGULATIONS.

Mainly for the purpose of preventing the sale of dry and immature Oranges, new regulations have been issued by the Victorian Department of Agriculture. The definition "dry" means that the proportion of juice extractable is less than 15 per cent. by weight, of the whole Orange.

The general requirements of the new regulations are:—Fruit must be sound and free from disease, and containers must be reasonably free of dust, stains, or unsightly markings.

Markings on cases must not be misleading in any way relative to contents.

Advertising matter put in cases must be limited to one sheet of paper, label, or slip, and must be sufficiently large to cover the top layer in the case or package.

Closed packages must be branded with:—(a) The initials of the Christian name and the full surname of the owner of the citrus fruits, or his registered brand; (b) The variety or varieties of citrus fruits; (c) The designation of the grade or quality standard of citrus fruits, viz.: "special," "standard," or "plain"; (d) the number of citrus fruits contained in each package. These markings shall be in letters of not less than $\frac{3}{8}$ inch in height, if stencilled on packages, and not less than $\frac{1}{4}$ inch in height if printed on a ticket or label.

Fruit sold in open packages must be packed in accordance with the grade standards, but need not be marked with such grade standards, nor with the name and address of the owner of the fruit.

Fruit sold for factory use is also exempt, provided that the words "for factory use only," are stencilled on

packages in letters of not less than one inch in length, and provided also that such citrus fruits are sound and free from disease.

Five types of cases are allowed for packing citrus fruit, viz:—Export (1-1/3 bushel case), 22 4-5 inches long by 11 2-5 inches wide by 11 2-5 inches deep; Canadian standard case, 18 inches long by 11 1/2 inches wide by 10 1/2 inches deep; Canadian bushel case, 20 inches long by 11 1/2 inches wide by 10 inches deep; Australian bushel case, 18 inches long by 8 2-3 inches wide by 14 1/2 inches deep; Australian half-bushel case, 18 inches long by 8 2-3 inches wide by 7 1/2 inches deep.

Citrus described as "special," must be sound, clean and well-formed, and mainly free from disfigurements. Blemishes due to insect pests must not exceed five per cent., and fruit must be of even color, and matured.

Citrus fruits described as "standard," must be similar to "specials," except with regard to blemishes; 10 per cent. of blemishes is allowed in this class. "Plains" will be allowed 25 per cent. of blemishes.

Citrus fruit must be sized into the following sizes, according to diameter of fruit:—2 1/4 inches (2 1/4-2 1/2 inches), 2 1/2 inches (2 1/2-2 3/4 inches), 2 3/4 inches (2 3/4-3 inches), 3 inches (3-3 1/4 inches), 3 1/4 inches (3 1/4-3 1/2 inches), 3 1/2 inches (3 1/2 and over).

Penalties of not more than £1 for the first offence, and not more than £10 for every subsequent offence, are provided against branches of the regulations.

O.T. ENTERPRISE.

Should success attend the shipment of 1,000 cases of citrus juice to London by O.T. Ltd., it will mean some-

thing big for the Australian citrus industry. Success will mean that this firm will be able to dispose of the juice of 200,000 to 300,000 cases of Oranges and Lemons for direct factory use. Compared with shipping the fruit, the advantages claimed are that it will eliminate cold-storage charges, and wastage, as with fruit. It is estimated that a case of citrus fruit weighs about 50 lb., and the freight would be 4/-, whereas by extracting the juice and concentrating it the total weight would not exceed 5 lb. The freight charge would be approximately 3d., as compared with 4/-.

SOUTH AFRICA'S CITRUS FRUIT EXPORTS.

The United Kingdom is the principal market for exports of citrus fruit from the Union of South Africa. Of the average yearly exports of 546,000 boxes of Oranges during 1923 to 1927, approximately all went to the United Kingdom, as was also the case with exports of 46,000 boxes of Tangarines and 26,000 boxes of other citrus fruits (mostly Grapefruit).

South African exports of Oranges including Tangarines, amounted to 802,000 boxes in 1927, and 579,000 boxes in 1926, approximately all of which went to the United Kingdom. South Africa exported 37,000 boxes of Grapefruit to the United Kingdom in 1927, and 33,000 boxes in 1926.

U.S.A. RECORD ORANGE CROP.

The Orange crop of California is estimated to be 30 per cent. larger than the record year of 1926. Lemons also show an increase of 15 per cent.

Citrus Growers at Murrabit

Allegations Refuted by V.C.C.A.

Conference Approves Limitation of Agents.

Dealers are Not New Factor in Market.

Detailed Explanation of Mr. Taylor's Case.

(To the Editor, "Fruit World.")

Sir,—Your correspondent does not hesitate to employ "we" and "our" as if he were the voice of citrus growers throughout the State. Of course, this is not so. He does not even belong to the co-operative movement, but at a meeting some months ago in the Murrabit district, he said he approved of the V.C.C.A. levy being increased to 3d. As this levy is paid only by V.C.C.A. growers, the latter will doubtless appreciate support from such an unexpected quarter.

To do your correspondent justice, he has the courage of his convictions. There are twenty-one districts of citrus growers in the V.C.C.A., but your correspondent, despite the limited knowledge of the history and problems of the movement that an outside grower could possibly have, does not hesitate to tell these growers what is wrong with their organisation. Might I suggest that just as capable growers have devoted years and years of thought to the organisation, and that these older growers follow the constitutional practice of bringing their ideas before the Annual Conference, where delegates from all the citrus areas have the opportunity of discussing them and registering their views by resolution, which then becomes the policy of the organisation.

Annually for seven years, districts of the V.C.C.A. have had the opportunity of altering the policy of limitation of agents. The only definite move in that direction was a resolution by the Murrabit growers, whom your correspondent purports to represent, that the principle of limitation of agents should be still further applied—in fact, that they should be limited out of existence and that the V.C.C.A. should have its own selling floor. But consistency does not appear to be your correspondent's strong point.

It is unfair to infer that limitation of agents by the V.C.C.A. has brought the dealer element into the wholesale market. Dealers were operating in the wholesale market for many years before the V.C.C.A. was thought of, and to a greater extent than they are to-day. Wisely, or unwisely, they

have become part and parcel of the wholesale marketing operations in the course of the last fifty years. They handle chiefly low-grade and wasteful fruit, and inside and outside agents alike use them occasionally to clear lines that are hanging fire and glutting the market to the detriment of the better quality fruit. Whatever opinions may be held regarding them, the V.C.C.A. has not succeeded in eliminating them from the marketing operations. One dealer, who, perhaps, handles the largest quantity, operates almost exclusively with an outside agent. If all fruit was high-grade, well packed and of good keeping quality, there would not be the same scope for dealers.

Elaborating "our" main objection to the limitation of agents, your correspondent asks whether growers are to be expected to drop firms with whom they have built up a connection over a number of years? How does this apply to Murrabit? In 1924-25 he says there were very few Murrabit growers outside the V.C.C.A., and that inside of two years the membership had dropped to six. I challenge these figures. Your correspondent should know quite well that when it was proposed to form a packing shed at Murrabit, an effort was made to get all growers to join. As a few had an antipathy against the V.C.C.A., it was decided to bow to the minority to ensure the success of the shed. To now have their action misconstrued is the reward of these loyal growers, for their sacrifice. At the same time I would point out that if very few Murrabit growers were outside the V.C.C.A. in 1924-25, how could the necessity for their dropping of outside agents "with whom they have been dealing for years" be a reason for their leaving the V.C.C.A.?

The question of limitation of agents has been fought out again and again. Any difference of opinion that exists on this matter relates to the number of agents, not to the principle of limitation. Is there any one district in which there is a majority of growers in favor of wholly abandoning that policy? As I understand, the views of the outside growers at Murrabit, all they want is an increase in the number to "include all reput-

able agents." That is a perfectly legitimate contention on which a decision can be secured at the next annual Conference. During the Directors' tour of V.C.C.A. districts some months ago, the views of the outside growers at Murrabit to enlarge the number of agents to include all reputable merchants, were placed before well-attended meetings of growers, and in no instance was any supporting resolution proposed.

Where is the consistency of your correspondent when he enters the field of market quotations? He first of all complains that prices returned to V.C.C.A. growers are lower than the V.C.C.A. published prices, and in the next breath promises to produce sworn declarations from purchasers that they cannot buy at the V.C.C.A. published prices. He cannot have it both ways.

It is sheer presumption for your correspondent to say that the majority of growers have no confidence in the Melbourne marketing scheme. Such statements merely demonstrate the rashness and general unreliability of his assertions. If the majority of growers had no confidence in the scheme, surely they would have altered it long ere this. To suit his own arguments, your correspondent conveniently ignores the fact that the V.C.C.A. is controlled by V.C.C.A. growers.

In considering the measure of control exercised by a co-operative body, any fair-minded man would first ascertain the quantity of fruit reaching the wholesale markets, where control is possible. To take the estimated production of the State and compare it with the fruit passing through the hands of the accredited agents is to confess to a degree of simplicity not often encountered. No voluntary co-operative organisation can compel a grower to send his fruit to Melbourne if he has a better market elsewhere.

For instance, of 70,000 cases of citrus despatched by rail from the Merbein-Redcliffs area, to September 30, under 20,000 cases came to the Melbourne wholesale market to inside or outside merchants. Of the balance about 4,000 cases went to the Railways, but the bulk apparently went direct to retailers or consumers in the metropolis and country centres. This direct trade has been growing very rapidly, and has been facilitated by the V.C.C.A. stabilisation of prices, as retailers now have a reliable guide of market values when making their contracts. All this emphasises the necessity of retaining control of the Melbourne market.

With regard to Queensland, New South Wales, and even Victorian citrus fruit reaching the Melbourne market, your correspondent seems to have the unhappy faculty of manipulating figures in a most sinister way. One can guess the source of his misleading information. However, it is useless pursuing his misinterpretations. To say that outside agents "are handling the majority of the citrus" is too gross a misrepresentation to merit a reply excepting an emphatic denial. Suffice it to say that at the proper time, we will be able to produce reliable figures regarding the control exercised by the V.C.C.A., which no amount of ingenious argument, based on inadequate knowledge or market gossip can alter.

To say that lack of support by citrus growers and the breaking away of the Tomato-growers was the reason for increasing the levy is not putting the position fairly. The principal reason for the increase was the estimated lightness of the citrus crop in Victoria as supplied by the various districts of the V.C.C.A. and the growing direct trade between grower and retailer, already referred to, which has come about by reason of the stabilisation of the market by V.C.C.A. control, thus eliminating risks of serious market fluctuations and making it easier for grower and buyer to negotiate a price. Unfortunately, many growers fail to see the connection between these factors, and think that when they sell their fruit other than through the channels of the accredited agents, they are not liable to pay any levy. They would realise how fallacious is this contention if there were no regulation of the central market.

As to the Tomato-growers "breaking away," the facts are that the directors decided, in view of opinions expressed by many growers, that the V.C.C.A. should gradually withdraw from other marketing schemes excepting citrus, but at the same time should render any reasonable assistance by way of advice to fellow producers desirous of organising themselves on a co-operative basis. When invited by the Barham and Bendigo growers to attend meetings for purposes of discussing the marketing of Tomatoes, I explained the position. At Barham, I pointed out to the growers that if they agreed to contribute 1d. per case towards their own marketing scheme, they could raise enough money (based on their previous year's despatches to the market) to pay their own representative in Melbourne. This plan was adopted, and they now have their own man in

Melbourne. The position was also explained to the Bendigo growers, but I do not know what action, if any, has been taken.

Out of consideration for your valuable space, I have had to refrain from touching on a number of other questions raised in your correspondent's letter, but to all these there is an effective and complete answer.

I will now pass on to the "charges" made by Mr. S. G. Taylor; it was reported in the press that they related to an incident in 1923. I had no recollection of any such occurrence, and certainly the directors could not know of it, because they were not in office at the time. Our 1923 files were searched, and no trace of any letters on the subject could be found. Similarly, there was nothing in the 1924 files. Determined to trace the incident, we went back to 1922, and found some correspondence. This reveals an interesting position. It shows that on October 12 of that year, Mr. Esmond Russell, who was acting as market representative, reported that he inspected a consignment of 60 cases of Mr. Taylor's fruit in one of the accredited agents' stores, and that it was "somewhat wasty." The fruit was repacked, 13 cases being lost in the operation, and the rest sold, realising 11/- per case. Mr. Taylor was duly informed.

The first we heard from Mr. Taylor was when he wrote about three weeks later, complaining that in a further consignment of 54 cases, the agent informed him that 14 cases were wasty, but Mr. Taylor "was sure the fruit was sound." To prove this, he sent down a sample parcel. This parcel was inspected, and found to be in good order, but on November 12 we wrote, telling him that all the sample lot had gone "specky," adding—"this is a simple instance of Oranges under our own observation which appear to be in splendid condition one day and are bad the next." Not only was this so, but we also informed Mr. Taylor that Mr. Branson, the market representative, who had returned to duty in the meantime, was able to point to an entry in his daily note book, showing that he had inspected Mr. Taylor's second consignment, and had marked it "Wasty" before any complaint had come from Mr. Taylor. Mr. Taylor was further informed that at this time there was a lot of other wasty fruit on the market, the period being one of those which come about occasionally when fruit will not keep for any length of time. The file thus shows that all the facts were placed before Mr. Taylor, and for that grower to say at a public meeting "he had ap-

pealed to the V.C.C.A. and that body did nothing" is, to say the least, amazing.

All this happened six years ago. It was one of scores of wasty fruit incidents occurring at the time, and I confess that I had forgotten all about it. The file of correspondence proves conclusively, however, that there was no neglect of Mr. Taylor's interests, and that nothing more could have been done for any grower. As to the subsequent alleged restitution by the agent of the money represented by the waste fruit, I know nothing. No money passed through our hands. The agent himself was the first to come into our office when the report appeared in the press to suggest an investigation to clear the good name of the agent, not knowing at the time that his own firm was involved. On being apprised of the facts some time afterwards, when he had ascertained the name of the agent concerned, he said he might not be able to trace any letters, as the practice of his firm was to destroy all correspondence after five years, but he said that his old bank book should show what payments had been made.

At the same time, he suggested that his former chief salesman might recollect what happened.

This salesman has since set up in business for himself, and as an outside agent was very popular in the Murrumbidgee district. We have interviewed him, and he states he has no recollection of any such incident. He said he certainly would not report any fruit as wasty if it were not wasty. The grower had admitted that the account sales showed that the fruit was wasty, and that statement would be correct. So far as he (the former salesman) was concerned, there was no possibility of a mistake having been made, as the correspondence showed that both Mr. Esmond Russell and Mr. Branson had taken a note at the time that the fruit in question was wasty.

Meantime, the V.C.C.A. agent traced his old bank book, and this showed that Mr. Taylor had been paid three cheques between October and December, 1922. The third cheque, the agent thought, might have been for some readjustment on account of the wasty fruit. If so, it was by way of a compassionate allowance to the grower, and was in no wise to be taken as an admission that the fruit was not wasty. It was inconceivable, said the agent, that any statement could have been made by him that Mr. Taylor's fruit was not wasty, and he would challenge Mr. Taylor to prove that he received a letter or word of mouth from his firm stating that the

fruit was not wasteful.

Critics of the V.C.C.A. must be hard pressed when they have to rely on the misrepresentation of an incident that happened six years ago to prove the inefficiency of the organisation as it exists to-day.

Yours faithfully,

B. S. B. COOK,
Manager,

Victorian Central Citrus Association
Pty. Ltd.

SHEPPARTON GROWER'S VIEWS.

(To the Editor, "Fruit World.")

Sir,—I have read Mr. Jackson's letter in "The Fruit World" with much interest, the growers here are fully in accord with all Mr. Jackson's statements. Our growers are now much against the limitation of agents and at the next conference, if the system is not altered, our branch will probably be ready for some new proposition.—Yours truly,

W. MCGREGOR.

Shepparton, 11/12/28.

"V.C.C.A. MARKET REPRESENTATIVE."

(To the Editor, "Fruit World.")

Sir,—Since the publication of my letter in the December issue of the "Fruit World," I have received a letter from Mr. G. Kitchen-Kerr, Market Representative, V.C.C.A., re case quoted relating to prices returned by an accredited agent and an outside agent. To clear up any misunderstanding that may have occurred, I wish to take the opportunity of stating that Mr. Kerr was in no way connected with the case quoted, and would ask him to accept my apologies as far as he is personally concerned.—Yours faithfully,

WILLIAM JACKSON.

Murrabit, December 18, 1928.

AUSTRALIAN ORANGES FOR SINGAPORE.

Activity in N.S.W.

Three hundred cases of Valencia Oranges have been sent to Singapore by the Central Citrus Association. The purchasers of this trial shipment hope to open up a big trade in the Straits Settlements with Australian Oranges. This is the first shipment to leave Sydney this season.

The Imperial Fruit Show at Manchester, was a great success. Australia secured several valued prizes.

MR. TAYLOR STATES HIS CASE.

(The Editor, "The Fruit World.")

Sir,—As the grower responsible for the statement alleging inefficiency on the part of the V.C.C.A., may I point out that in our local (Kerang) paper (23/10/28), the V.C.C.A. denies all knowledge of the incident. In the "Fruit World" (1/11/28) it is said that enquiries are being made. If the directors would enquire from the then President and Secretary of the local branch of the V.C.C.A. (who are still residing in this district) they can get full particulars.

The Directors state that had the agent been guilty of wrong, his agreement would have terminated. The agent admitted my fruit was not wasteful and was honorable in paying me, but he could have said: "No, I refer you to the V.C.C.A." This matter should have been probed to the bottom, but the V.C.C.A. did not do so. I paid the V.C.C.A. to look after my interests, but have been badly "let down."

Should the Directors require any further details of my complaint against the V.C.C.A., I should be glad to give it to them personally,—and details of a somewhat similar case that occurred in this district only this season.

Will the Directors give a direct denial that I laid this complaint, or if not, will they state the reason why the declarations I asked for were not obtained.

Instead of the V.C.C.A. being a co-operative fruitgrowers' organisation, it is a proprietary company. The profit and loss account and balance-sheet are remarkable for their lack of information. The income is stated as £3,120 being "general levies, and sundry revenue." It was stated at a meeting the levies amounted to £1,632. What constitutes the balance of the revenue?

Among the expenses are noted:—Directors' fees, £100; general expenses, £104; office and rent, £156; salaries, £2,195; travelling and organisation, £317/19/3; telephone, £27/19/4; postages and telegrams, £98/12/4; printing and stationery, £59/15/-; loss on "Citrus News," £28/4/3.

Thus, £60 a week is a lot of money for growers to find. The salaries that are paid to the staffs could be cut down with advantage, and the balance so saved could be utilised as a fund to find new markets, insurance against loss on export, etc.

Not only is the V.C.C.A. inefficient, but growers get better prices by selling outside this proprietary company's limited channels of trade.

I am a firm believer in efficient co-operation among fruitgrowers. The inefficiency and wrong methods of the V.C.C.A. are the reason for its steady decline.—Yours, etc.,

S. G. TAYLOR.

Murrabit, 10/12/28.

FUMIGATION OF CITRUS TREES.

In the fumigation of citrus trees to kill red scale of Orange and various other scales and pests, tents are placed over the trees and calcium cyanide dust, 1 oz. per 100 cub. ft., is forced in by means of a hose and blower. On being released to the air, hydrocyanic acid gas is formed. This has largely superseded the "pot" method of mixing cyanide sulphuric acid and water.

Fumigation is done from December to early June.

For Lemons, anhydrous liquid hydrocyanic acid gas is used.

TABLOIDS FOR FRUIT DRINKS.

Chemists in America have perfected sugar from maize that will absorb Lemon and Orange acids, enabling lemonade and orangeade to be made without the fruit.

MODERN MACHINERY FOR COBRAM.

Citrus growers at Cobram (Vic.) are installing modern equipment to handle the pack. A Lightning grader with a capacity of 100 cases per hour has been installed, also a large washing and brushing machine, and a drying outfit.

PORTO RICO'S MISFORTUNE.

Prior to the hurricane that caused damage to the extent of ten million dollars at Porto Rico, the island was exporting each year to America, 892,000 boxes of Grapefruit, 546,000 boxes of Oranges, 549,000 crates of Pineapples, 12,854 pounds of canned and preserved fruits were also sent annually to U.S.A.

It will be many years before Porto Rico will be in a position to export to U.S.A. in such quantities again.

Believe nothing against another but on good authority; nor report what may hurt another, unless it be a greater hurt to conceal it.—William Penn.

Editorial Chats



IN wishing all our readers a Happy New Year, it is fitting that we should view in retrospect the year that has passed.

1928 has gone and we are glad of it. The New Year has dawned with all its possibilities—and its problems too—but we are going to press on, taking our courage in both hands.

We have had our personal triumphs and failures. It is our privilege to learn by our mistakes and to greet each new day as the best day that ever was for the exercise of all our talents in developing character.

In the year just past, we have had our bereavements, familiar faces are with us no more; they have sped onwards to the Light. New joys have entered our homes. If we search the inward recesses of our hearts we know that our striving is to make the way easier for children—ours and others. It is a biological truth, and a fundamental law of nature. Our hope is in the rising generation.

Our striving is not selfish, but spiritual. Where we do not see eye to eye, we can at least be tolerant and endeavor to see the other fellow's viewpoint.

So, welcome 1929! Come and bring your best and your worst. We are ready for the contest. This young country possesses men of character and ability, able and willing to face difficulties and the conquer them.

* * *

The fruit industry of Australia is facing many problems—some of them are very knotty. Some are inseparable from a country in progress of development; others have been induced by Governmental action in fostering plantings beyond the marketing capacity of the fruit. Then again, we are laboring under certain artificial conditions, inducing other artificial conditions for equalising, but the inevitable economic reckoning has to come.

This much may be said, that very earnest efforts are being made by the Governments concerned—Federal and State—to redeem the situation, while businessmen and growers are collaborating in order to assist in stabilising the position.

The dried fruits industry is winning its way patiently to stability to offset the effects of the planting boom of a few years ago. But the soft fruits, which depend on canning and jam making, is in the throes of economic depression; many believe the present troubles to be the birth pangs of the new and better conditions.

The efforts of the Development and Migration Commission, the Empire Marketing Board, the British Economic Mission (the Big Four), the Council for Scientific and Industrial Research linked with the forces of the business community, should achieve some worthwhile results in developing an economically sound fruit industry in this productive commonwealth.

Correspondence is welcomed from readers.

We are not responsible for the views expressed by correspondents.

SHOWS TO COME.

Victoria.

Bunyip, March 13.
Somerville, March 13.
Lilydale, March 20.
Red Hill, March 20.
Yarra Glen, March 20.
Bacchus Marsh, March 23.
Croydon, March 22, 23.
Garden Week, Melbourne, April 9-13.

New South Wales.

Batlow, March 26-27.

Acknowledgment.—Card of season's greetings to hand from the manager and staff, Committee of Direction of Fruit Marketing, Brisbane, Queensland.

Held over.—Letter from Mr. W. H. Doherty, Queensland Cane Growers' Council, Robt. Dowker, Marlborough, N.Z.; L. Hanlon, Whangarei, N.Z.; P. Floyd, Tyabb, Vic.; E. Weitnauer, Batesford, Vic.

FRUIT MARKETING ORGANISATION.

The Editor, "Fruit World."

Sir,—In your issue of December 1, on page 482, under the heading "South Australia Forms Marketing Organisation," you were good enough to refer to some meetings of Apple-growers I recently addressed in South and West Australia. I think part of your article is based on the abridged matter published by the South Australian press, because I notice a similar error. I am reported to have said that South Africa last year marketed 1,000,000 cases of Apples, but I did not make this incorrect statement, because whilst South Africa has begun to export Apples to Great Britain (which last year sold at very good prices), the quantities exported to date are insignificant.

I wonder therefore, if you will be good enough to insert the following correction.

I pointed out that other exporting countries were becoming serious competitors, and stated as examples that the export of Apples from New Zealand was constantly increasing, and that this year that Dominion had reached the record of 1,000,000 cases. I also instanced the enormous progress made by South Africa, in citrus and deciduous fruits, and pointed out that in 1928 the quantity of deciduous fruit exported reached close on 2,000,000 packages, whilst Oranges will not be far short of 1,000,000 cases.

The exports from South Africa, which will keep on increasing, show the recent progress made by one of our competitors, especially when it is pointed out that in 1920 the total quantity of deciduous fruit exported only reached 260,000 packages, and about 100,000 cases of Oranges. I also mentioned that several of the South American countries are now seriously coming into the market with Grapes and Oranges in ever increasing quantities, and that in a few years' time we shall have to meet more serious competition in their exports of Apples and Pears to Europe.

I also stated, however, that, despite this competition, I am of opinion that Australian Apples and Pears can be made to retain their position on the overseas market, but, as you have so ably indicated in "The Fruit World" from time to time, this can only be done provided the right type of fruit, presented in the correct manner, is sent at the right time, to the proper markets, and it is in order to look into these matters and apply the remedy in good time, that I urge

all those engaged in the industry here to look into the reforms we must bring about.

To lag behind our competitors means suicide for the Apple export industry; to keep pace with our competitors is even insufficient; we must, like all successful business men, forestall our competitors. If we do so we shall not only retain what we hold, but achieve greater success.

Yours faithfully,
H. G. Colombie.

WHAT THE FARMER NEEDS.

Comedian's View.

Will Rogers, the famous American comedian, who called himself the "Anti-bunk Candidate" for the Presidency of U.S.A., gave vent to the following just before election day, re election pledges to farmers:

"I know what the farmer needs, but I can't give it to him. But I am going to tell him before election that I can't give it to him—not afterwards. I can tell you, in a few words, what the farmer needs. He needs a punch in the jaw if he believes that either of the parties cares a ——— about him after the election. That's all the farmer needs, and that's all he'll get."

PERSONAL.

Mr. J. G. Aird, of Ringwood, Vic., Secretary of the Fruitgrowers' Cool Stores' Association of Victoria, has been created a justice of the peace.

Mr. Dudley J. Walters was unanimously elected managing-director of the Murrabit Packing Co. Ltd.

VISITOR FROM NEW ZEALAND.

Mr. R. J. Campbell, Director of the Horticulture Division of the N.Z. Department of Agriculture, visited Australia during November and December. Mr. Campbell visited many fruit-growing centres, and enquired into matters affecting the industry. He believes it is possible, by mutual tolerance and good understanding, to remove some of the trade disabilities which now exist between the two countries.

True courage is not incompatible with nervousness, and heroism does not mean the absence of fear, but the conquest of it.—H. Van Dye.

New South Wales

Will Citrus Crops Be Light? - Prune Growers Conference
News and Notes

(By Our Correspondent.)

PACKING of citrus fruits has been completed for the season on the irrigation area. There is still a fair quantity of Valencias to come from the coastal areas. It is estimated that from 70,000 to 100,000 cases have yet to be marketed from those districts.

Crop Prospects.

The outlook on the coast for next season's citrus first crop is anything but promising. Continued dry weather has already left its mark on the Navel and Common Orange orchards. Valencia groves will fare no better unless good rains come very soon. Old growers anticipate that if heavy rains fall during January, a big second crop may be regarded as a certainty. The fruit should be of good quality, and ready for marketing about November, when prices are invariably satisfactory.

The Eastern Market.

For some time the Central Citrus Association of N.S.W. has been endeavoring to develop the citrus export trade on the Eastern market. Their efforts so far have met with exceptional success. Regular monthly shipments are made now to Singapore, while shipments to Java go out fairly frequently. The latest centre to be touched upon is Madras, where a shipment is to be dispatched in the near future.

Citrus Exports to Canada.

Orders continue to come in well from Canada, where Australian citrus fruits are regarded very favorably. It is confidently anticipated that the Canadian business will develop extensively as time goes on.

CROP PROSPECTS.

Apples and Pears Light.

Citrus Light Unless Rain Comes.

The Department of Agriculture advises re crop prospects as follows: Peaches (coastal districts), 25 per cent. below normal, due to ravages of Peach aphid; northern and western districts, 20 per cent. above normal.

Prunes.—Young district normal, Murrumbidgee area, 60 per cent. below normal.

Apples.—Half crop. Granny Smith very light.

Pears.—20 per cent. below normal.

Vines.—Setting was satisfactory, rain needed.

Citrus Fruits.

With the exception of irrigated orchards, chiefly inland, the whole of the citrus trees in the State are suffering from the prolonged drought. No useful rains have fallen since June. Coastal districts are suffering, the trees being more or less wilted. A report in November showed that a good blossom on all varieties resulted in a good setting. Except in a few localities, chiefly in the hills and Kurrajong districts, excessive falling of young fruit has not yet occurred, and prospects are for at least 75 per cent. of last season's crop being produced if more favorable conditions soon occur. With many growers, however, the immediate position is critical.

Later.—Since the above reports were received, the continued dry spell has caused a fair proportion of the citrus fruits to fall. At this stage it is impossible to accurately estimate the crop that is likely to be harvested in 1929.

Batlow Show.

The dates of the 1929 Annual Show of the Batlow Agricultural Society has been altered from March 12 and 13, to Tuesday and Wednesday, March 26 and 27, on account of former dates clashing with other local fixtures.

Batlow (29/11/28).

Mr. H. V. Smith, manager Batlow Packing House and Cool Stores Rural Co-operative Society Ltd., reports as follows:—

The principal fruits grown in this district are Apples, Pears, Cherries, Plums.

The chief varieties of Apples are Granny Smith, Jonathan, Democrat, Delicious, London Pippin, Dougherty, In Pears the chief varieties are Winter Coles, Packhams, Josephines, and Williams. In Cherries, St. Margaret, Noble, Florence, and a few Early Lyons. In Plums, President, Grand

Duke, Pond's Seedling, Felleberg.

Crop prospects for the coming season are:—Apples light, Pears medium to good, Cherries good, Plums medium. We expect the production to be about 80,000 cases, comparing with 160,000 last season.

We have a cool store capacity of 50,000 cases, and handled approximately 140,000 cases through our packing house organisation this season. We are at the moment just finishing up en Granny Smith Apples.

Prices for the best grades of the leading varieties have been fairly sound. The lower grades and off varieties of both Apples and Pears have hardly paid to handle this season. The need for some organised efforts to handle the export of Apples and Pears in general becomes more apparent every season.

Grading Regulations.

Other matters which urgently require attention are the need for a standard export case and the revising of the grading regulations. The latter are not suitable to any packing house putting up a three-grade pack.

N.S.W. PRUNE GROWERS.

Annual Conference.

The annual conference of the N.S.W. Prune Growers' Association was held at Young, on November 29. Marketing problems were discussed at length. Owing to the difficulty of disposing of last season's crop, due to several causes, it was recommended that there be an early reduction in prices, and conference agreed that the question of prices be left in the hands of the Executive.

The President (Mr. J. M. Dixon), in reviewing the situation, said that importations had increased, and the Association's efforts to have the import duty raised had not yet met with success.

Representations were made to the Federal Authorities immediately after last conference, and after having received an indication from the Minister for Customs that the matter might be dealt with Ministerially and not by the Tariff Board, the co-operation of the State Marketing Bureau was sought in the preparation of a statement. Owing to the number of intervening circumstances, the matter was not dealt with by the Minister, but was recently referred to the Tariff Board for public inquiry.

Resolutions.

It was resolved—

"That two or more members of the Executive be authorised by Conference to wait on the Federal Cabinet

to urge an immediate decision in regard to the importation of American Prunes."

"That this Conference recommends that the Executive secure the services of a competent man to the limit of the Association's means in order to secure the membership of all commercial growers of Prunes in the Association."

"That a petition be prepared in order that a poll of growers be taken to determine if there should be a marketing Board for Prunes."

Election of Officers.

President, J. M. Dixon; Executive, Messrs. J. Thompson (Griffith), P. C. Cox (Griffith), W. M. Josephson (Kingvale), A. E. Horne (Kingvale), E. E. Willis (Waterview), E. O. Catts (Meimuru); Secretary, Mr. E. E. Herrod.

BUNCHY TOP.

Closer Supervision.

The first definite recognition of the presence of bunchy top in Australia was in 1913. It is believed to have been introduced from Fiji by the importation of suckers. It has proved to be one of the most serious diseases affecting the prosperity of the Banana grower in Queensland, and New South Wales, and some plantations have been completely wiped out by its ravages.

A similar fate awaits those districts only lightly affected by it, unless the recommendations designed for the control and exclusion of the disease are strictly adhered to.

New Quarantine Area.

The whole of the north coast, from Nambucca Heads to Tweed Heads, has now been placed under quarantine.

The N.S.W. Minister for Agriculture (Mr. Thorby), states that Banana plants can neither be removed from one part of a quarantine area to another, nor planted in a quarantine area, unless a permit has been granted by an inspector of the Department of Agriculture.

The man who would take an unfair advantage of an enemy cannot be trusted as a friend.

* * *

It is better to say nothing than to speak the truth ill-naturedly.

* * *

Friendship is usually treated by the majority of people as a tough and everlasting thing which will survive all manner of bad treatment.—Ouida.

A NEW TYPE OF SPRAY.

Although the spray, which is known as Volck, has been in use in California for some time, it is comparatively new to Australia.

Volck is a petroleum product, free from injurious materials. Mr. James Collins, the well-known orchardist of Redland Bay, Queensland, used this material exhaustively on his citrus trees, and with good effect on all scale pests. It gave a 100 per cent. kill wherever it touched the scale, and this he secured without using a high pressure pump for spraying. He also used it on tender bush-house plants without any detrimental effect.

Volck is recommended for spraying for all classes of pests that effect citrus trees.

A two per cent. strength of two gallons per hundred gallons of water is sufficient for control of all common scale insects of citrus trees. In cases where the grower uses the spray very liberally on the tree, the dose may be reduced to a one and one-half per cent. dilution, or at the rate of one and one-half gallons per one hundred gallons of water.

Liberal wetting of citrus trees is highly recommended, for the increased efficiency and completeness of scale control obtained by this practice greatly increases the time that a tree can stand without again becoming dirty with scale.

The Australian Distributor for Volck, which is manufactured by the California Spray-Chemical Co., is Mr. H. C. Pannifex, of 26a Market-street, Melbourne.

The Volck-arsenate of lead combination spray for the control of codling moth on Apples and Pears is also distributed by this firm.

FRUIT FOR THE EAST.

A Trade Opening.

The Fresh Food and Refrigerating Company Ltd., a Singapore concern which was registered in Sydney recently, has been formed in order to import from Australia frozen meat, fruit, and other produce lines, for distribution throughout Malaya and Sumatra. The company hopes to be the means of establishing a large market in the East for Australian produce, and intends to open its own depots, at a later date, in Java and elsewhere. Its works at Singapore will have a capacity of 1,000 of refrigerated cargo when the works are in full swing shortly.

New Zealand's Fruit Industry

The fruit industry of New Zealand is an important rural enterprise, and is of increasing importance because of its developing export trade.

According to information supplied by the Department of Agriculture a summary of the industry may be presented thus:—

(1) The principal kinds of fruit and varieties are as follows:—

Apples.—Alfriston, Ballarat Seedling, Cox's Orange, Delicious, Dougherty, London Pippin, Granny Smith, Gravenstein, Jonathan, Dunns, Reinette, Rokewood, Rome Beauty, Rymer, Stayman Winesap, Statesman, Sturmer Pippin, Worcester Pearmain.

Pears.—B. Bosc, B. Clairgeau, B. de Capiamout, B. Diel, B. Easter, Conference, Doyenne du Comice, Elizabeth Coles, Fertility, Glou Morceau, Jargonelle, Josephine de Malines, Kieffer's, L'Inconnue, Louise Bon of Jersey, Marie Louise, P. Barry, Packham's Triumph, Williams' Bon Chretien, Winter Cole, Winter Nelis.

Plums (Japanese).—Botan, Burbank, October Purple, Ogon, Santa Rosa, Satsuma, Wickson, Wrights' Early.

Plums (European).—Cole's Golden Drop, Early Orleans, Early Rivers, Evans' Early, Greengage, Jefferson, Kirkes', Monarch, Ponds' Seedling, Reine Claude de Bavay, The Czar, Victoria, Washington, Magnum Bonum.

Apricots.—Moorpark, Hemskirke, Large Roxburgh Red, Newcastle, Oulins' Early.

Cherries.—Bedford Prolific, Biggar-eau Napoleon, Black Heart, Black Tartarian, Early Lyons, Early Purple Guigne, Early Rivers, Florence, May Duke, St. Margarets, Werder's Early Black, White Heart,

Lemons.—Eureka, Lisbon, Messina, Villa Franca.

Grapes.—Albany Surprise, Gros. Colman, Black Hambro.

Nectarines.—Ansenne, Early Rivers, Goldmine, New Boy, Zealandia.

Peaches.—Briggs' Red May, Carman, Early Rivers, Elberta, Golden Queen, Hales' Early, Highs' Early Canada, Hobb's Late, Kalamazoo, Kia Ora, Late Crawford, Mary's Choice, Mayflower, Paragon, Pullar's Cling, Salwey, Sneed, Triumph, Wiggins.

The leading varieties of small fruits such as Raspberries, Strawberries, Gooseberries, Currants, Loganberries, are also grown.

(2) The approximate acreage devoted to the fruits above dealt with are as follows:—

	Acres.
Apples	17,671
Pears	2,255
Peaches	1,949
Nectarines	293½
Apricots	1,206
Plums	1,100
Cherries	325
Lemons	795

Present reports indicate that the crop will be slightly less than last season.

NEW ZEALAND.

Hastings.

Mr. Ralph Paynter writes as follows under date November 29:—The season just past has been the heaviest in the history of Hawke's Bay. We exported overseas just on 200,000 bushels, and from New Zealand, over 1,000,000 bushels.

Hawke's Bay's production this season will not be as heavy as last, but still we will have a great deal of fruit, nevertheless.

The principal fruits grown are Apples, Pears, Peaches, and Plums, with a limited quantity of Gooseberries, Currants, and Cherries.

Principal Varieties Apples.—Gravenstein, Cox Orange, Pippin, Munroes, Jonathan, Delicious, Sturmer, Statesman, Dougherty, Granny Smith, Ballarat, Wolesley, and Rome Beauty.

Principal Varieties Pears.—W.B.C., Louise Bon Jersey, Packham's Triumph, Bosc, Josephine, Winter Cole, Winter Nelis, and P. Barry.

Principal Varieties Peaches.—Mayflower, High's Early Canada, Eulates, Wiggin, Carman, Peregrine, Husteds, American Pound, Kalamazoo, Mary Choice, Gold Dust, Late Crawford, Paragon, Mahuta Solway, Hobb's Late, and Golden Queen.

Principal Varieties Plums (English).—Early Rivers, Evan's Early, Giant Prune, Greengage Grand Duke, Pond's Seedling, and Monarch.

Principal Varieties Plums (Japanese).—Okarana, Wrights' Early Burbank, Santa Rosa, October Purple.

Crop Prospects.

Apples.—The crop is going to be fair, some varieties are light on account of very heavy crop last year.

Pears.—Good average crop, needs a good deal of thinning in some varieties.

Peaches.—Good average crop, with the exception of some early varieties.

Plums (English).—Light crop generally.

Plums (Japanese).—Patchy, some varieties light and some very heavy.

Comparing the coming crop with that of last season, it is noted that Apples on the whole will be a much lighter crop; Pears, perhaps slightly heavier; Peaches, lighter; Plums (English), very much below last year's crop; Plums (Jap.), slightly below last year.

District News.

New plantings have been going on steadily during last winter, not in any big acreage, but small blocks in different parts of the district, and established orchards have been added to in some instances.

Central Power Spraying Plant.—In regard to new installations, the piping system for spraying has been largely extended, and I believe will be in general use in a few years.

The electric motor has displaced the benzine engine for driving the pump for this system. In many instances large pumps are being used, and the pressure increased 350 to 400 lbs. being the standard.

Christchurch.

Mr. Oscar E. Duncan, manager, Canterbury Orchardists Co-op. Ltd., Christchurch, reports under date November 27:—

The principal fruits grown are Apples, Pears, Quinces, Plums, Peaches, Apricots, Cherries, Gooseberries, Tomatoes, Currants, and Raspberries.

Owing to a favorable season, due very largely to the absence of late frosts, there is a satisfactory crop of all the above-mentioned varieties of fruit. Indications point to crops of similar size to those of last season.

Area.—It is not possible to give the correct acreage of the different classes of fruit, but it might be stated that the province of Canterbury, generally speaking, grows sufficient for its own consumption in pip fruits, and not sufficient in stone fruits, it having to rely on Otago largely for supplies of these. Tomatoes are grown in great quantities, and there is a large surplus which is taken by the Southern Districts.

There is ample cool storage space, and the growers avail themselves of this medium to hold their fruit for favorable market conditions.

Up-to-date power spraying machines are in general use and graders are being introduced here and there.

Stationary Spray Plants.

Many orchardists are reticulating their land with pipes for conveying

General Australasian Representative:

H. G. COLOMBIE

Temple Court, Collins Street, Melbourne

'Phone: F3284.

Telegraphic Address: "Columbine," Melbourne.

Over 20 years' experience in the
marketing of fruit Overseas.

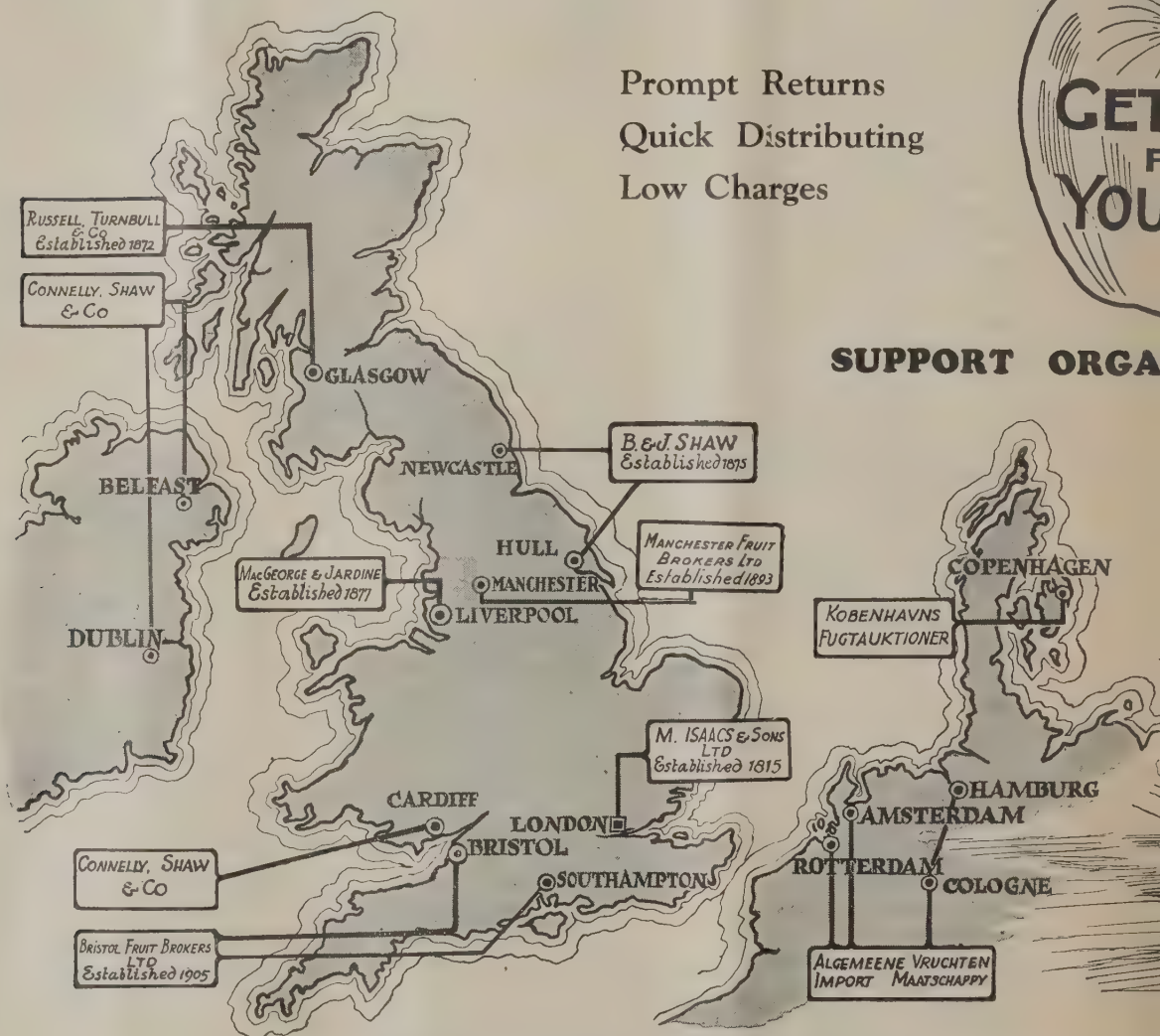
INCREASE Y

The Most Comprehensive

Prompt Returns
Quick Distributing
Low Charges

GET
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SUPPORT ORGA



By entrusting the sale of their fruit to any of the firms listed above dealing with Federated Brokers and obtaining the full benefit of above-board marketing.

The marketing of fruit is a complicated and delicate operation requiring experience and special skill. The Brokers referred to possess these in full.

Every advantage of orderly marketing, regulated offerings, and knowledge of what happens to your fruit, is assured to you by this system, not built up on paper, but created by generations of solid work.

YOUR RETURNS

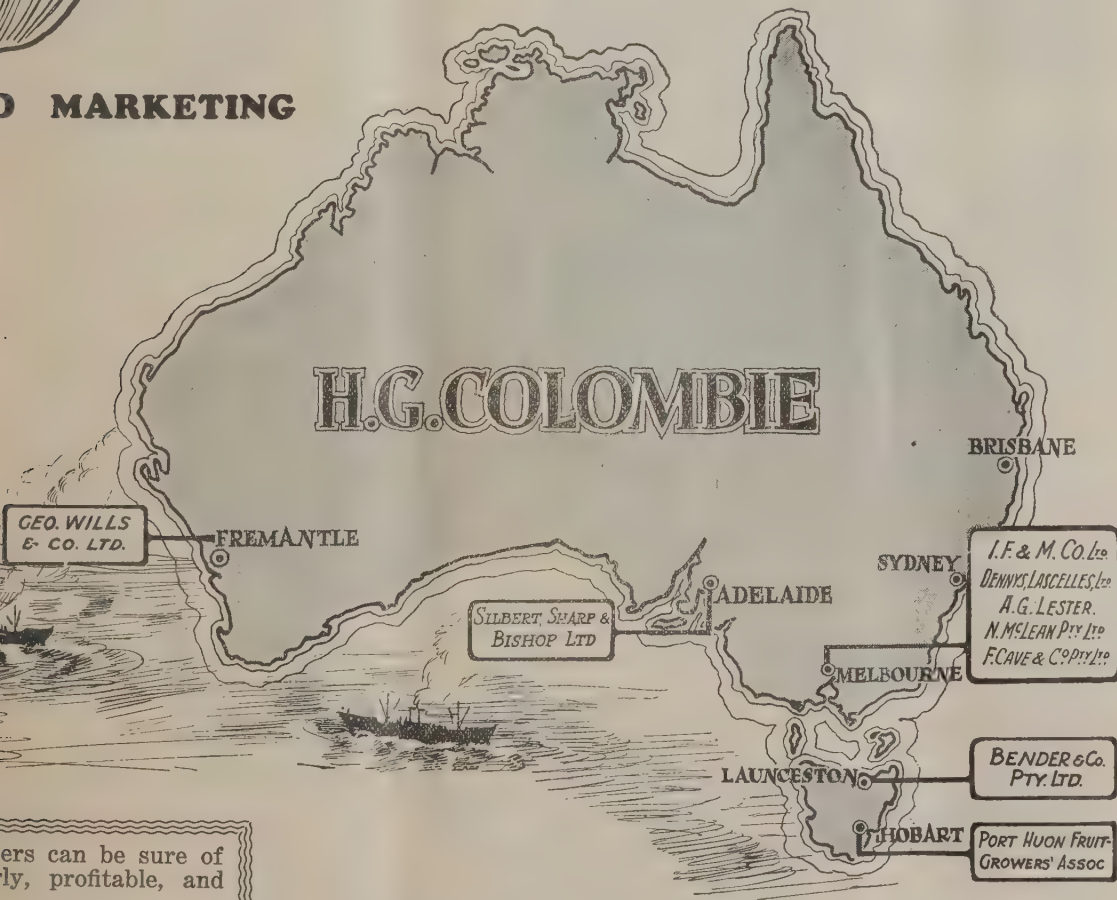
ORGANISATION in the Fruit Trade



For shipping space, advances, etc., apply to the Shipping Representatives shown on this map.

MARKETING

H.G. COLOMBIE



ers can be sure of
ly, profitable, and

g for great experi-

markets, and full
ation; an organisa-
practical experience.

AUSTRALIAN GROWERS!

Profit by the experience of others, and **SUPPORT ORGANISED MARKETING.**

CENTRALISE the sale of your fruit **IN** the **ONE RECOGNISED AUCTION SALEROOM AT EACH PORT**, where Overseas Fruit is concentrated, and where large numbers of buyers attend regularly, ensuring **WIDE DISTRIBUTION.**

This **CONCENTRATION ENABLES BROKERS** to **REGULATE SUPPLIES** and **STABILISE PRICES.**

By this system **BUYERS** are **MADE TO COMPETE** for the fruit to the **BENEFIT** of **YOUR RESULTS**; whilst by other methods Salesmen compete to obtain buyers.

CATALOGUES are printed for Buyers before sale, and reprinted after sale, **SHOWING ACTUAL PRICES PAID** for your fruit. No manipulation of results possible.

Parcels are sub-divided to enable all buyers to compete on equal footing.

Each parcel is valued by Auctioneer before sale, and lots not realising reserve prices are withdrawn.

the spraying compounds among the trees and applying the high pressure system.

The N.Z. Fruitgrowers' Federation is active in serving the growers—the Canterbury Orchardists' Co-op. Co. Ltd., represents them here.

The Department of Horticulture give the growers the services of efficient instructors, who spare no trouble to be of assistance.

There are two societies looking after the interests of the Canterbury fruitgrowers. One for the stone fruit and Tomatoes and the other for Apples and Pears. At the meetings of both societies instructive lectures are given.

NEW ZEALAND.

Auckland, N.Z. (19/11/28).

There are approximately 7,000 acres under fruit in the Auckland district, thus:—Apples, 3,600 acres; Peaches, 500 acres; Nectarines, 100 acres; Pears, 300 acres; Plums, 500 acres.

Citrus. — Lemons, 700; Sweet Oranges, 250; Poorman Oranges, 150 acres.

Other Fruits.—Grapes (outdoor), 200 acres; Strawberries, 300 acres; Loganberries, 80 acres; Gooseberries, 150 acres; other fruits, 200 acres (including Tomatoes). Grand total, 7,000 acres.

In most lines there is promise of a good crop. Lemons over the average, Apples are up to the average, and, with additional areas coming in, there should be a local export of fully 100,000 cases, after providing for the needs of Auckland and other cities of the district, with a confined population of 250,000. The crop should average higher than in 1927-8.

Citrus Developments.

The New Zealand Citrus Council has been formed. This new body will be composed of the various Citrus Associations of New Zealand, and will act for the whole undertaking, advertising, etc., etc. A N.Z. Tomato Council has been formed, composing some five Associations—the first conference will be held in Wellington on January 24.

Mr. H. E. Stephens, of the London office of the New Zealand Fruit Control Board, is now in New Zealand, reporting on last season's work and the future prospects, which he considers very hopeful.

Mr. Geo. A. Green has been very busy since his return from Australia. He has made a round of New Zealand in the interests of the Horticultural Trades' Association, and also assisted in the formation of the N.Z.

Citrus and the N.Z. Tomato Councils.

The Citrus Research and Survey Committee of the Institute of Horticulture have under their organiser, Mr. Geo. A. Green, arranged for and planted 1,000 citrus stocks in four varieties, on which will be worked pedigree buds from U.S.A., Australia and New Zealand selected stock. The resulting trees will be planted out in test areas.

Several thousands of selected buds have been cut by the organiser and provided for working purposes to the various nurseries, who are using the Institute's selected buds.

CHARGES TOO HEAVY.

New Zealand Complaint.

A writer in the "New Zealand Smallholder," complains of the reduction from a grower's cheques by commissions and other charges. He refers to fruit sent from New Zealand to the English markets.

On one account of £1,660, the charges made in London totalled £191/1/9, made up as follows:—Sorting £4/13/10, advertising £2/6/11, charges (wharf and dock) £84/8/3, commission £99/12/9.

When a good season is experienced, he states, the charges may seem light enough to the growers, but when parcels of Delicious, the pick of a district's crop, fail to bring more than 12/- per case, the London charges at this rate seem excessive.

The Hawkes Bay, N.Z., district, reports heavy setting of Pears and large exports are expected.

NEW GRAPE CUTTING DEVICE.

The new "Thumbail" Grape picker is now available. The paragraph in the "Fruit World" of September 1 attracted considerable attention, and it is of interest to know that supplies are now available. This new thumbail seccateur can be worn on either hand, the fruit can be taken by the hand wearing the cutter, and in one operation the stem is severed as the fingers and thumb close.

This new device enables Grape picking to be done with extraordinary rapidity, and with less effort than under any other known method. Further details are given in the advertisement in this issue. The Victorian agent is Mr. F. R. Mellor, 440 Elizabeth-street, Melbourne; the Commonwealth sole agents are Messrs. Horn & Co., Hardware House, Melbourne.

Canned Fruits

Local Trade and Export

Much public attention was focussed on the canned fruit industry. The Victorian Government was requested to guarantee advances of £50,000 for seasonal operations of co-operative canneries in the Goulburn Valley. The proprietary canneries also put their case before the Premier (Sir William McPherson), pointing out economic aspects of the situation.

Growers sent a deputation to the Premier, detailing the competition between proprietary and co-operative canneries, at which was mentioned the plight of growers, who for years had supplied proprietary canneries with fruit, but who now found this avenue closed or very limited, because of the reduced activities of these companies.

An officer of the Treasury was sent to investigate the finances of the co-operative canneries, in which considerable Government money is invested. The Premier endeavored to bring about co-ordination between the Goulburn Valley Co-operative companies, and a working understanding between them and the proprietary companies.

It is now understood that the pack of Australian canned fruit exported to England in 1928, has been sold at a price showing a profit on Pears but a loss on Apricots and Peaches. The Canned Fruit Export Control Board is said to be extending the market for Australian canned fruit in England. The fruit has won a good reputation, and valuable publicity is having its effect with the British public.

The canning of fruit and jam making is now actively in progress at proprietary and co-operative factories throughout Australia.

On the canned Peaches exported last year the Federal Government has forwarded for a bounty of 1/6 per doz. 30 oz. tins.

CANNED POTATOES.

Even potatoes are to be canned in U.S.A. The packer who is taking up the new idea says people in America are too tired to peel potatoes, so he is going to do it for them.

CANNED FRUITS.**Export Control Board.**

Messrs. A. W. Palfreyman, of Australasian Jam Co. Pty. Ltd., Melbourne, and A. W. Fairley (Shepparton Preserving Co.), Vic., have been appointed by the Commonwealth Minister for Markets (Mr. Paterson) as members of the Canned Fruits Export Control Board for two years, as from December 9.

Mr. Palfreyman will represent the privately-owned and proprietary canneries, and Mr. Fairley the co-operative and State controlled canneries. They were the only candidates nominated for vacancies on the Board.

CALIFORNIAN PEARS.

Under date of November 10, advice has been received by the Australian Fruit Canners' Association, from the Californian Department of Agriculture, as under:—

"Preliminary checks indicate that the production of Pears of all varieties amounted to about 219,000 tons in 1928. Last year the crop amounted to 181,000 tons, while in 1926 the tonnage harvested was estimated at 207,000 tons. There had been 9,433 cars of Pears shipped out of the State up to and including November 5. Interstate shipments to the same date a year ago were 7,942 cars, while the total for the season amounted to 8,146 cars. The tonnages canned and dried this year were also above the tonnages so utilised a year ago."

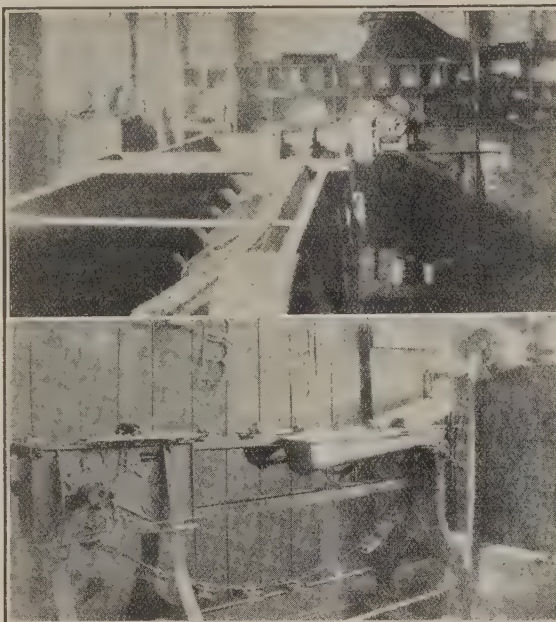
The Secretary of the Australian Fruit Canners' Association (Mr. Jas. L. Moore), states that the following

sales of Australian canned fruit were effected in Great Britain during the week ended December 15, 1928:—

	Cases.
Apricots	689
Peaches (halves)	17,308
Peaches (sliced)	2,060
Pears	2,749
	<hr/> 22,806 <hr/>

The total sales from the commencement of the season to December 15 are, therefore, as follows:—

	Cases.
Apricots	43,477
Peaches (halves)	174,661
Peaches (sliced)	2,946
Pears	7,072
	<hr/> 228,156 <hr/>



NEW PEAR PEELING MACHINERY (Described in November "Fruit World").—The Pears are peeled by passing through a (patented) boiling solution, followed by jets of water (see top picture); the Pears are then automatically halved and cored as in the lower picture. On view at 193 Victoria Parade, Collingwood, Melbourne.

Dennis & Cooper Ltd.

COVENT GARDEN, LONDON, ENGLAND
Fruit Brokers and Commission Salesmen

Make your Shipments of **APPLES** through

A. W. BOWEN & CO.

44 Augusta Street, St. Peters, Adelaide - - Phone F 1214

Who will give all information

Financial Facilities Offered

Queensland Bananas.

Strong Criticism in Southern States.

THERE is genuine public criticism in the Southern and Western States regarding the poor quality of the Bananas being sent from Queensland.

The statement by Mr. Forgan Smith, Minister for Agriculture, in Queensland, that this is propaganda designed to injure Queensland's trade, is ill judged. The complaints are wide spread and genuine. The market representative of the Queensland Committee of Direction, has reported adversely on the quality of the Bananas coming forward. The Market Superintendent of the Melbourne City Council recently presented a strongly worded report to the Council on the subject.

* * *

The Secretary of the Melbourne and Metropolitan Fruit Retailers' Association, states that the Association recently decided that if there was no improvement in the quality of Bananas coming from Queensland, they would be compelled to refuse to handle them, and would approach the Federal Government to have the duty reduced on Fiji Bananas.

NEW MARKETING SCHEME.

Control by a Marketing Company.

Ballot to be Taken.

At a recent meeting of the Gympie Fruitgrowers' Association, held at the Gympie Town Hall, Mr. S. Jackson, presiding, a new marketing scheme was outlined by the Association's delegates to the Sectional Group Committee.

Mr. J. P. Carey said that in 1915 the acreage under Bananas was: Queensland 8,166, N.S.W. 416; in 1927, the Queensland acreage had increased to 20,315, and N.S.W. 2,000. In 1916

the consumption of Bananas in the Southern States totalled 611,736 cases (of 1½ bushels), made up as follows:—Fiji, 471,681 cases, Queensland 58,329, and N.S.W. 81,726.

In 1922 the peak consumption was reached, with 1,115,306 cases, being: Queensland 681,393, N.S.W. 433,540, Fiji 3, and Norfolk Island 370.

The consumption of Bananas in the several States in 1927, was as follows:—N.S.W., 332,067 cases; Victoria and Tasmania, 331,156; South Australia, 66,279; Queensland, 200,000. The cost of production was 14/2 per case on the farm; the price of 15/- per case f.o.r. represented 12/3 on the farm, so growers were receiving less than the cost of production by 1/11 per case.

Established 1896.

Cooksley & Co.

Fruit Agents.

Fruit Exchange, Brisbane

Consign to the Agents with years of experience, who guarantee Fruitgrowers the best of Attention and Satisfaction. Selected Tasmanian and Victorian Representatives. Reference: Commercial Banking Coy., of Sydney, Bank of Victoria. Shipping and Railing, No. 29.

Mr. Carey then outlined the methods of handling and ripening Bananas in Sydney and Melbourne, which he said were costly and inefficient. The new proposals were for control to be exercised in Brisbane first, with subsequent extension to other centres; ripening to be done by the C.O.D.; fruit to be sold only when ripe.

For Southern Markets the proposal was for the whole of the fruit to be handled by a marketing company, the

company to provide ripening rooms in Sydney, Melbourne and Adelaide, and to spend £5,000 on advertising; the company to be the sole receivers of Queensland Bananas. A draft agreement had been drawn up. The C.O.D. was preparing a pamphlet setting out the pros and cons of the whole scheme and a vote of the growers would be taken. There were three ways of acquiring the Bananas: the Sugar Acquisition Act; the Fruit Marketing Act; or the Primary Producers' Organisation and Marketing Act of 1926-8.

Mr. Rise supported Mr. Carey's remarks; under the new scheme the work of ripening, selling, etc., would be done for 10 per cent.; at present growers were paying 27 per cent. for the work. A ripening expert would be brought from U.S.A.

The delegates were thanked for their reports.

Banana ripening rooms are to be established at the Queensland University, for which £1,000 has been made available by the Commonwealth Council for Scientific and Industrial Research.

QUEENSLAND FRUIT FOR W.A.

Via Broken Hill, saving 500 Miles.

The Commonwealth railway authorities are considering a proposal to run four trains a week from Queensland to West Australia, via Parkes, Broken Hill and Adelaide. Queensland thus hopes to effectively compete with Java in W.A. in the sale of Pineapples and Bananas.

It is pointed out that there is a saving of 500 miles by cutting out Albury and Melbourne, and fresh fruit could be made available to Broken Hill and other far-western districts of N.S.W.

**Do not run any Financial Risk with your Fruit
but Consign it to**

Telegraphic Address:
"Apples, Brisbane."

H. V. GEEVES

Registered Shipping No. 6.

FRUIT EXCHANGE — BRISBANE

SELECTED AGENT FOR:

Victoria: Harcourt Fruitgrowers' Progress Assn. Ltd.
Harcourt Fruit Supply Co. Ltd.
Victorian Central Citrus Assn. Ltd.

Tasmania: State Fruit Advisory Board.
New South Wales: N.S.W. Central Citrus Assn. Ltd.
Batlow Packing House Co-op. Soc. Ltd.

QUEENSLAND STRAW TABOO.

A recent Order in Council made by the N.Z. Government, prohibits the importation of any goods from Queensland into New Zealand, which are protected with straw packing. Queensland will now have to use some other form of packing for Pineapples sent to N.Z.

CANE GROWERS' ENEMY.

Field rats are a deadly enemy to the cane growers of Queensland. They nest close to the cane stools, and devour the eyes and internodes to such a degree, that the stem breaks off. Three-pence per rat tail is paid by some growers.

BANANA BORER.**Control by Parasites.**

Mr. J. L. Froggat, who recently visited Java to make investigations on behalf of the Queensland Department of Agriculture, has returned with two enemies of the Banana borer.

One insect, which was of material

assistance in reducing borer in the Dutch East Indies, has been liberated at Cooran, while the other is still being handled in quarantine.

New varieties of Bananas were brought from Java and these will be grown in strict quarantine for two years.

SAN JOSE SCALE.

Orchardists are advised to watch out for San Jose Scale, and mark any infested tree by tying a piece of cloth on it. When the usual winter spraying is in full swing, special attention should be given the marked trees.

This scale is a deadly enemy of the fruitgrowers in the granite belt (Queensland), and is difficult to detect in the early stages of infestation.

To those who have been fortunate enough to have escaped its attentions, here are a few pointers:—

The adult insect has a greyish-brown covering, and where a tree is badly infested, it has the appearance of having been dusted with fine wood ashes.

Any tree that shows signs of gum-

ming should be investigated, because where San Jose scale has been left unchecked for a period, gumming of the tree generally follows prior to the dying of the tree, or the affected part.

San Jose scale can only be fought effectively during the winter months, when oil and lime sulphur sprays can be used at full strength.

(F. L. Jardine, in Queensland Agricultural Journal.)

BANANA RIPENING EXPERIMENTS.

The Council for Scientific and Industrial Research is spending nearly £1,000 in equipping ripening rooms in the Queensland and Melbourne Universities. These rooms are now nearing completion. The refrigerating plant has been received and installed, and the rooms are being tested out preparatory to actual experiments on Bananas taking place. Work in Queensland is under the direction of Professor Bagster, D.Sc., who has as his assistant Mr. Huelin, B.Sc. The work in Melbourne will be under the direction of Professor Young, D.Sc.—"Queensland Producer."

Dennys, Lascelles

Limited.

Temple Court, 422 Collins Street, Melbourne

HEAD OFFICE AND WOOL STORES AT GEELONG

*Exporters of Fresh, Dried and Citrus Fruits
to England, the Continent and New Zealand.*

Personal Supervision of all Consignments at Port of Shipment.

Prompt Returns.

**Importers of Wrapping Paper
and Swedish Woodwool**

**Suppliers of Cases
Hardwood or Canadian.**

Tasmania.

Local and Export Trade

Apple Crops Light

News and Notes

THE weather during November and December showed marked improvement, and the altered conditions have effected a great change in the countryside. Following the abnormally wet spring, the warm days experienced encouraged a prolific growth in all crops which had not been seriously affected; grass is plentiful, and the orchards, although carrying only light crops, are generally making good growth and presenting a healthy appearance.

The Apple export season is drawing to a close, there being only approximately 25,000 bushels left in the cold stores. These are mostly the "Tasma" ("Democrat") variety, which are being held for the New Year market. The exports for the season now total:—

Interstate:—Brisbane and Sydney: 1,488,978 cases.

Overseas:—United Kingdom, Continent and S. America: 2,804,468 cases.

It is estimated that fully half a million bushels of the crop were not harvested owing to no payable market being available, so the total yield for the season would be in the vicinity of 4,750,000 bushels.

Fruitgrowers generally are disappointed with the returns received from the different markets. Owing to the heavy crops experienced in Victoria, N.S.W., and S. Australia, the prices ruling during the greater part of the season left very little margin over expenses. Overseas exports, with the exception of the South American shipment brought only moderate returns, and those growers who had the foresight to dispose of the greater portion of their crops on a f.o.b. purchase basis were generally in a better position than those who shipped on consignment.

This season, with the prospects of light yields in all the eastern mainland States, the position is entirely different, and Tasmania is being combed very thoroughly by buyers seeking to obtain their requirements both for the mainland and overseas.

Owing to the favorable market which is certain to be experienced upon the mainland, growers are extremely loth to dispose of their crops, even at tempting prices (8/- to 8/9 f.o.b.), and it is doubtful if the overseas exports will total a million cases.

New Cold Stores.

Port Huon now presents a busy

scene of activity. The two cold stores that are being erected by the Port Huon Fruitgrowers' Association and Tasmanian Orchardists and Producers' Association, are now well under weigh, and will be completed in time for next season.

The sites chosen are adjacent to the "deep water wharf," and facili-

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ties will be provided to rail the fruit to the ship's side. The wharf has now been widened, and efforts are being made to secure a number of overseas vessels to lift direct shipments.

The cold stores will each have a capacity of about 50,000 cases, but provision will be also made for possible extensions up to 100,000, re-refrigerating plants, which are being installed being designed to serve the maximum quantity.

Black Currant Crops.

A somewhat difficult position has arisen in regard to the Black Currant industry. During latter years the production of this fruit has been steadily increasing, and has now overtaken the factory requirements. Owing to the stocks of unsold pulp that are now on hand, the prospects for the disposal of the whole of the coming season's crops are not favorable.

An endeavor is being made to stabilise the market by an agreement amongst processors to take two-thirds of their normal requirements, and developing the trade in fresh fruits to the mainland. In the meantime growers are being advised that the position will only be accentuated by increased production, and that is not desirable at this stage to develop new areas.

Plant Pathologist.

The Department of Agriculture has been further strengthened by the appointment of Dr. W. J. Dowson, as Plant Pathologist.

Dr. Dowson, who was formerly mycologist to the Royal Horticultural Society, England, has latterly been resident in Kenya Colony, Central Africa, where he was engaged in special investigation in regard to the fungi and bacteria attacking tropical fruits and plants. He will be stationed at Launceston in the new quarters, which are being prepared for the technical staff of the Department.

FRUIT CROPS.

Forecast for the Season.

Light Apple Crop.

Following the abnormal Apple crop of 1927, it was generally expected that this year's crop would be below average, and from present indications it is doubtful whether the commercial Tasmanian crop will exceed 1,700,000 bushels. In general the cold, wet weather experienced until recently materially reduced the set of the fruit and hampered spraying operations for the control of black spot, and only in certain of the later districts do the crops appear to even approach normal. Cleopatra and Scarlet Pearmain are among the worst cropping varieties this season, and in some instances are a complete failure. Sturmers, Jonathans, Worcester, Pear-

main, and Dunn's Seedling, are showing a 50 to 80 per cent, crop, while the bulk of the remaining export varieties would average about a half-crop. Taking the prospective commercial Apple crop as a whole, it is unlikely that it will come out at more than 45 per cent. of normal (3,500,000 bushels).

Pears are very variable, and the crop is expected to be very light in the North. In the Southern districts Buerre Bosc, Packham's Triumph, and Easter Buerre show a medium crop and in some parts Doyenne du Comice is looking well. Here again the inclement weather at flowering time has undoubtedly had a deleterious effect on the set.

Berry fruits, so far as can be judged, are about normal, and most varieties of plums are carrying average crops. Towards the end of September there was a frost, which wrought havoc among the Apricot plantations, especially in the lower areas. More recent reports, however, show that a good crop of large, well-formed fruits is likely to be harvested—about 75 per cent. normal. With regard to the fruit prospects in other States the following figures will serve to indicate the position:—

Tasmania's Apples.

In 1928 Tasmania produced about 4,750,000 bushels of Apples; the normal crop is 3,500,000 bushels. The 1929 crop is forecast at 1,700,000 bushels. The overseas export is expected to be under a million bushels.

Scottsdale.

The crop prospects at Scottsdale, writes Mr. Oliver Tucker, are poor in

quantity, but good in quality. Owing to a very wet season, the principal orchardists have been on the alert to check the ravages of black spot and other pests, and their efforts have been successful.

There are about 150 acres under fruit, but there are only about eight commercial orchards. These have areas ranging from four to thirty acres.

The chief fruits grown are Apples, Pears and Plums. The varieties of Apples grown are: Jonathans, Sturmers, F. Crabs, Worcesters, Dunns, A.P.M.'s, Cox's Orange, Lord Wolseys, Democrats, and a few other varieties. Pears: W. Coles, W. Nelis, Claregeau, Du Comice, B. Bosc, Williams, Vicars. Plums: Cherry Plums, Japanese, Yellow and Green Gages.

The possible yield this season will not be more than 30 or 40 per cent. of last season; 18,000 bushels of Apples and Pears were marketed from this district last year, and many hundreds of bushels were not sent away owing to poor prices.

Scottsdale is not a fruitgrowing centre in the general acceptance of the term, for the land is mainly used for cropping cereals and vegetables, while pastoral pursuits and dairying are carried on. The reason for the light crop this year is probably due to excessive cold and wet weather experienced during blossoming time. The heavy yields of last season might also have been a contributing factor, but to discount that, there are certain varieties that have set just as well this season as last year, and moreover, the bulk of the trees look healthy and robust.

Lalla.

Mr. Frank Walker, of Launceston and Lalla, reports: Light crops, and considerable damage has been done by hailstorms in some districts. Dunns and Alfristons a complete failure, Tasma's and Jonathans light and patchy. Compared with last season, the crop will not average 20 per cent., and will only be 50 per cent. of a normal crop. The chief fruits grown at Lalla are Apples and Pears.

West Tamar.

Mr. Neil Campbell, M.H.A., of Winkleigh, Tasmania, writes, under date November 28:—

The principal fruits grown in Tamar districts are Apples and Pears, with a few trees of stone fruits in various orchards.

The approximate area under fruit in West Tamar districts is 5,000 acres.

The prospects for coming season are that both Apples and Pears will be light. This is due to the effect of a very heavy crop last season having reduced the vigor of the trees. This was followed by an abnormal spring. There being almost continuous rain during the period of bloom (October), and which no doubt prevented the usual activity of the bees.

Present indications are that the crop that is now growing will not be more than 50 per cent. of that of last season. An area which provides an exception to the general rule, is one that last season was smitten by a summer frost, and as a result produced very little fruit.

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South Australia.

Mr. C. H. Ragless, Eden Hills, S. Australia, writes as follows on December 13, 1928:—

The principal fruits grown here are Almonds and Grapes. Several Almond orchards of 15 acres, others smaller; vineyards of up to 30 acres.

The Almond crop promises to be

BRISBANE

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**FRESH FRUIT
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On Forward Sales of fresh fruit we act for sellers and collect cash in exchange for delivery order.

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Apples, Pears, &c.,

Best market prices and prompt
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Correspondence invited.
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**THE
International Fruit & Mercantile Co.,
410 Flinders Lane, Melbourne
MURDOCH BROS., Hobart**

very good, best since 1918, due to favorable weather at the time of blooming.

Grenache, Doradillo, and Muscatel are principal Grape varieties grown in this neighborhood. A good average crop expected, especially Grenache.

The present prospects are better than last year, but lots of things may happen before the crops are harvested.

Prunes do well, and a grower from

four acres of D'Agen has harvested seven tons of dried fruit. This season the Prune crop will be a heavy one. Apricots, mostly Moorpark, are bearing heavily, but Pears and Apples are very light, probably on account of bearing heavily last year. Peaches, although not grown largely here, show a fair crop. It will be seen from this summary that with the exception of Apples and Pears, the season's prospects are bright.

The settlement comprises about 1,000 acres of rich red and chocolate soil, with limestone and yellow clay subsoil.

The Grapes grown here are treated at the distillery of Messrs. Milne & Co., and Coonowarra Brandy is making a name for itself in the liquor trade.

Coonowarra.

The principal fruits grown in this district, writes Mr. F. Darwent, are Apples, Prunes, Apricots, Duchess Pears, Peaches and Grapes. Grapes promise a heavy crop, and four tons to the acre are common in this district, without irrigation.

Gumeracha.

Mr. J. B. Randell, Gumeracha, reports as follows under date November 26:—

The principal fruits grown in this locality are Apples, in the leading export varieties. Pears, Williams predominating, but a few of the later varieties are grown, though the area is relatively very small. Plums, in the main, conserving and drying varieties.

The crop prospects are:—Apples, very light, down to nothing, in most orchards; two or three growers report from a quarter to half a crop. Pears are showing for a fair average crop, and the fruit in the main is looking well. Plums in most instances are showing promise of heavy to very heavy crops; having regard to the condition of the canned and dried fruit market, it would appear unlikely that growers will be able to dispose of their crops on anything like profitable terms.

Comparison with last season's crops:—Apples, I should say, taking the district as a whole, will not average more than seven per cent. of the crop of last year. Allowing for the probability of all there is growing to pretty large size, it may possibly reach 10 per cent.; this is, however, I think, very doubtful. Pears are

about equal to last season, which may be characterised as a fair average crop. Plums are considerably heavier than last season, and, speaking in averages, can be termed a very heavy crop.

District Notes.—Relatively few new plantations are being made. Pretty large quantities of Apples are still held in cold store, and, despite various endeavors to expedite the sale of these, the prospects of early disposal of the balance at anything like profitable prices seem small indeed.

Tomato planting is almost finished, a rather smaller area being under this crop this season; consequent upon the

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Correspondence Invited.

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report from the factories that heavy stocks of pulp are still being held, the probability of a satisfactory outlet for Tomatoes is not regarded as being at all bright. Land for the planting of the summer crop of Potatoes is being prepared, and a fair area will be planted toward the end of the year or in early January.

WESTERN AUSTRALIA.

Karragullen.

Mr. Thomas Price, "Illawarra," Karragullen, W.A., reports (24/11/28) as follows:—

Apples and Pears are the only fruits grown here.

All varieties of Apples, which consist of Granny Smith, Yates, Dougherties, Cleos., Jonathans and Dunn's, have set a very heavy crop, and we are now busy thinning; fully two-thirds are taken off.

Bartlett Pears is the only variety

Apricots 720, and smaller acreages under Figs, Nectarines, Quinces, Passion Fruit, Bananas, and small fruits.

The Superintendent of Horticulture, Mr. Geo. W. Wickens, reports as follows, under date December 4:—The Apple crop this year will be a heavy one. The normal crop for this season should be 700,000, but present appearances point to this being exceeded by 50 per cent., and if the fruit does not suffer from dry weather causing it to become unusually small, I estimate the Apple crop for the coming season to be 1,100,000 bushels.

Stone fruits are light: Apricots probably not more than 60 per cent. of last year's production. Peaches and Plums about the same.

All varieties of Grapes promise well for a good crop.

Pears.—The export varieties are carrying medium to good crops. Winter Nelis being good to heavy. Williams (Bartletts) are light throughout the State, and owing mainly to this latter cause, Pears this season will be about 25 per cent. below normal crop.

SUCCESSFUL DEMONSTRATION OF ORCHARD IMPLEMENTS.

D. Harvey's Useful Inventions.

At Ballendella, Vic., recently, a large number of orchardists of the Rochester district, gathered at "Kelvin Grove," the orchard of Messrs. R. Aitken & Sons, to witness a demonstration of "Harvey" horse and tractor-drawn implements, under the supervision of Mr. D. Harvey,

The Grape vine hoe did, effective work, also the skimmer, in removing weeds from beneath citrus trees, to obviate hand digging. A disc plough, convertible into a three-furrow implement, attracted attention by its capacity to get close up to the trees without risk of damage to them. A one-way disc cultivator also proved effective. It was fitted with a three-furrow ploughing gang for working under the branches and up to the butts of the trees. A 6-plate cultivating gang was substituted for the ploughing gang, its neat work being shown right under the trees. Tilted on end, this ingenious implement rapidly made an irrigation ditch, then in reverse, it neatly filled the earth in again. This implement is convertible into a two-way disc, a spring-tooth cultivator, or into a rake to gather prunings.

After demonstrating with horse power, a tractor-drawn implement

was used—a three-furrow plough known as the Harvey Y8. It ploughed to a depth of nine inches, and made a good job of it. A model O rigid-tine power lift cultivator, was given a trial in stiff soil, and did its work in an impressive manner. A B7 four-furrow tractor lift plough, which is convertible into a three-furrow implement, also did well. It was shown attached to the side of the tractor in such a way that it worked right up to the butts of the trees.

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MELBOURNE

Reference—Satisfied Growers in all States

we grow, and the crop is a medium one.

All growers in the district are talking of a record crop of Apples this season.

Western Australia has 23,352 acres under fruit as follows:—Apples (acres) 10,044, Grapes 4,959, Oranges 2,941, Mandarins 180, Lemons 538, Pears 1,135, Plums 941, Peaches 825,

T. STOTT & SONS Fruit Merchants

Established 1882

A Trial Consignment solicited from Growers in all States.

Prompt Settlement.

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"YARRA" BRAND SPRAYS

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Tasmanian Agents—

M. L. HOPKINS, HOBART

A four-furrow "Harvey" Lancia disc plough tackled hard ground under gum trees. This plough showed its effectiveness in turning in green stuff grown for manurial purposes.

China is the leading importer of fresh fruits in the Far East, with annual purchases of 2,774,000 dollars. Among the customers of the United States, China and the Philippines are nearly tied. They bought over a half-million dollars worth of fresh fruit apiece in 1927.

Dried Fruits Industry.

GRUB INFESTATION ELIMINATED.

Interesting Discovery by a Renmark Grower.

Mr. H. Showell, a well-known grower-producer of dried fruits, of Renmark, S.A., demonstrated a process for the elimination of the grub pest in Sultanas to the Council of the Grocers' Association, at Adelaide, recently,

HAMBURG

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that caused a decidedly favorable impression. This is reported in the "South Australian Storekeepers and Grocers' Journal."

Mr. Showell produced samples of treated dried fruits which had been kept for four years after treatment. Samples had been kept in a room that was infested with moths, but the fruit was not affected in the slightest degree.

Mr. Showell said he had shipped two lots of treated fruit to England, and replies received about the fruit had been satisfactory. The process was designed for Sultanas and Lexias, but would be, he thought, effective also with Prunes.

The liquid used was a fine emulsion, and would not be detrimental in any way to the sale of the fruit. About 34 drops of emulsion to a pound of fruit was the required amount, and the process was simplicity itself.

In answer to questions, Mr. Showell said: There was no smell about the treated fruit, and the taste in no way affected. The emulsion was used as a spray, it was not costly, and it would pay a grocer to spray fruit rather than destroy it.

Mr. Showell produced some parasite wasps which he claimed did good work, but were often destroyed through lack of knowledge. They were about one-sixteenth of an inch in length.

"In the ordinary way," said Mr. Showell, "we do not get grubs until November. The eggs are laid in February and develop into a moth about October. This moth lays eggs which produce grubs in November, and by December enough grubs are produced to render the fruit unsaleable. The thought came to me that as the fruit is infested after it leaves the packing shed, something must be done to prevent infestation, and the process on which I have been experimenting will kill the smallest grub or egg, and keep the fruit clean."

An Important Experiment.

Mr. Showell is processing 500 tons of Sultanas for the A.D.F.A. during the coming season, this by way of a try-out on a commercial scale.

DRIED FRUITS BOARD.

Election by Growers on January 24.

An election of three growers' representatives on the Dried Fruits Board for New South Wales, Victoria, and South Australia, will be held on January 24.

The candidates are:—George L. Hardie, of Merbein; Joseph W. Hopkins, of Birdwoodton; Arthur L. Johnstone, of Irymple; Alexander Mackinnon, of Red Cliffs; Peter Malloch, of Irymple; Herbert D. Howie, of Renmark; and William M. Nulty, of Leeton.

Two informal nominations were received.

For West Australia, Mr. Alfred Yeates, of Millendon, at present a member of the board, has been re-elected unopposed.

ANTI-DUMPING LAW.

Applied to Californian Raisins.

The Minister for Trade and Customs (Mr. Gullett) has decided that the provisions of the Industries Preservation Act for the prevention of dumping should be applied to Californian Sultanas, including bleached and unbleached seedless Raisins.

The decision was reached on the recommendation of the Tariff Board, which inquired into allegations that Sultanas from the United States were

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being sold to importers in Australia at less than reasonable export prices. The Tariff Board, after investigation, decided that the importation of low-priced Californian fruit was having a prejudicial effect on the Australian dried fruits in dustry.

Australian Fruit for South Africa.

During 1927, Australia exported to South Africa 544,752 lbs. Currants, 28,549 lbs. tinned fruits, Apples to the value of £1,287, and fruit juices to the value of £371; 54,372 lbs. of jams and jellies were also sent to South Africa.

SIX IMPLEMENTS IN ONE

Reversible to throw to or from the trees.

Made in various sizes.

Send for particulars

ONE WAY DISC - SPRING TYNE CULTIVATOR
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for the big business placed through them in 1928. We assure all our customers that every effort has been made on our part to guarantee for them thorough satisfaction and excellent results from the Trees supplied. Growers can depend on Goodman's.

For Fruit Trees

of every description and full advice and help in connection with planting.

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THE NEW QUICK BREAKING OIL SPRAY FOR
CITRUS AND DECIDUOUS FRUIT TREES

"VOLCK" is a patented oil spray.

"VOLCK" is manufactured by the California Spray Chemical Co., at Watsonville, California, U.S.A., by a highly-trained staff of CHEMISTS and ENTOMOLOGISTS, and is the result of many years study of the action of SPRAY OIL from the insecticidal and toxic standpoint on scale and insects affecting citrus and other fruit trees.

"VOLCK" DOES NOT BURN THE FOLIAGE.

"VOLCK" CAN BE USED DURING ANY WEATHER TEMPERATURE.

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"VOLCK" will kill every Black and Brown Scale it hits, and is more effective than any other known Oil Emulsion for the destruction of Red Scale.

"VOLCK" will control RED SPIDER. Kills this Pest in all stages: Eggs, Young and Adult Spiders.

"VOLCK" kills CODLIN MOTH Eggs, young Worms, and also prevents stings.

"VOLCK" is used at 2 PER CENT. strength.

"VOLCK" MAY NOT BE AS CHEAP as other oil emulsions, but it is more effective, and is absolutely safe for any grower to use under any weather conditions.

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METROPOLITAN FRUIT- GROWERS' ASSOCIATION.

Local Marketing and Export.

A MEETING of the Executive of the Metropolitan Fruitgrowers' Association was held on December, Mr. W. Mock, President, being in the chair. There were also present: Messrs. J. Tully, L. Pepperell, W. T. Seller, and J. W. Aspinall (Secretary), Messrs. J. G. Aird and H. L. Tomkins were present representing the Cool Stores Association. Apologies were received from Messrs. R. M. Finlay and R. J. Lorimer.

Mr. J. Stevens.—Mr. Stevens tendered his resignation; recognising his invaluable services, it was unanimously decided to ask him to carry on till the end of the financial year.

Victoria Market.—The Department of Lands wrote, stating Messrs. G. C. A. George, J. W. Aspinall, and E. W. Thompson, had been appointed to advise the City Council on matters affecting the Melbourne General Market for three years.

Congratulation and Thanks.—Decided to write to Mr. J. Cain, M.L.A., ex-Assistant Minister for Agriculture, thanking him for appreciated services.—Congratulations to Mr. A. E. Chandler, M.L.C., on attaining Cabinet rank.

Pears for Export.—The Cool Stores' Association wrote, advising the adoption of a uniform case for Pear export, preferably either the half-dump or six-inch bushel case.—Referred to Pear Committee.

Cool Stores Association.—A resolution was adopted, thanking the Cool Stores Association for their successful action in dealing with the problem of large Apple storages last season.

Regulating Apple Supplies.—Resolved, that this Committee recommend to the Cool Stores Association that if each store would inform the Secretary, Mr. Aird, the number of cases they propose to release each week, that would to some extent regulate the supply, but for the large amount of fruit that is not stored it would be almost an impossibility to regulate that. Further action deferred for more information.

Vacuum Fumigation.—The efficiency of the Hydro Vacuum Fumigation Co.'s plant has been recognised in the gazettement of their works at Ingles-street, Port Melbourne, Vic., as a Quarantine Station. Not only does this system kill grubs, borers, etc., but also the eggs, which, if not destroyed, infest dried fruit and other products. Details are given in

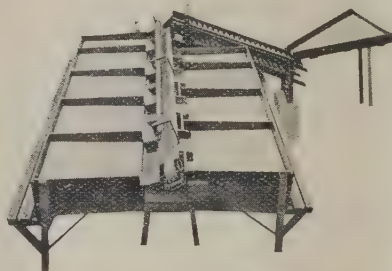
"To choose the Best is Wisdom"

When You Buy a "LIGHTNING" FRUIT GRADER YOU BUY FOR ALL TIME

The "Lightning" will still be an asset when regulations for marketing fruit are much more stringent than they are at present.

Fitted with the "Lightning" Patented Rubber Roller—the secret of successful sizing.

Equally successful for every class of fruit—Oranges, Lemons, Mandarins, Peaches, Apricots, Plums, Apples, Pears, Tomatoes, etc.



Model 10, with the Elevator Conveyor attached. Spring floor bins on each side of the Machines. Each bin will hold up to 3 bushel cases of Fruit.

The one machine efficiently sizes the lot

WITHOUT DAMAGE.

In addition to Sizers, we manufacture complete Processing Equipment for Packing Houses, Gravity Conveyors, Lidding Press, Clamp Trucks, etc.

THE "LIGHTNING" FRUIT GRADER CO.

5 Hoddle Street, Collingwood, N.9, Melbourne, Vic.

Cable and Tele. Address: "Lightning," Melbourne.

VICTORIA.

Quantong.

Mr. C. H. Jost, manager Quantong Fruitgrowers' Association, writes (27/11/28). We have fair crops here of Apricots, Peaches, Plums and W.B.C. Pears.

Apples and Pears (other than W.B.C.), are very light—practically a failure.

One trouble—a very serious one—is shortage of water; reservoirs we understand, are very low.

Added to this, the fact that our Government in the past has thrown our money into the lap of the co-op. canneries, and seriously interfered with the proprietary companies—putting them into such a position that they cannot buy; this means our market is ruined. Is it fair?

We have been supplying the A.J.C. for upwards of 30 years. Under pre-

sent circumstances we have no outlet for jam and canning fruits.

Harcourt.

Crop Prospects.—The growers in this district are faced with another lean year. The prospects as far as the Apple growers are concerned are not so favorable as in 1927, when the thrip devastated the orchards, the general opinion being that there is at present a lighter crop in sight than that which was harvested in that year.

Also, owing to the favorable weather conditions, the codlin moth is much more in evidence. With the lighter crop and abundant foliage it is impossible to adequately cover all the fruit with the spray mixture, and even when a spray programme has been conscientiously carried out, the pest is much more abundant than formerly.

Experiments are being carried out with oil sprays in conjunction with, or as a substitute for arsenate of lead, and are giving promising results.

The Pear crop is certainly an improvement on that of 1927 by about 30 per cent. of the record of last year, but still much below normal.

Plums are about equal to 1928, but the present prospects of marketing them at a remunerative price are not too bright.

A few Cherries are grown and are bringing in a good return to growers.

There are no other fruits of commercial importance grown in the district.

Harcourt Cool Stores.

To show the lightness of the Apple crop, the shareholders of the cool store instructed the directors to open the store if 8,000 cases were available. It is probable that this quantity of Apples and Pears will be forthcoming. As the capacity of the store is 80,000 cases, much of which is filled with later varieties, as the earlier ones are marketed, some idea of the great falling off in production can be obtained.

The spring has been abnormally

-LEMONS-

We are the largest Buyers in Australasia

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AGENTS WANTED

To Influence Consignments of Apples by Reliable Firm

Write, Stating Terms, Etc., to—

HARTSTOKE, FRUITERS

LTD.,

Brentford Market, Middlesex.

Code: A.B.C., Fifth Edition.

Cables: "Hartstoke," Brentford, Middlesex."

dry, and the growers are at present engaged in irrigation, fortunately an adequate supply of water is available.

Fruit Supply Co.

At the annual meeting of shareholders of the Harcourt Fruit Supply Society Ltd., the balance-sheet for the preceding year was presented. This disclosed a very satisfactory year's trading, both in the packing shed and the supply of requisites. The Society has at present a surplus of £1,048 over liabilities.

It was also decided to donate a prize for

the best kept orchard

among the shareholders for the coming year. Judging to take place in January, 1930.

During 1928, over half a million bushels of fruit were produced, which is easily a record for the district.

A large acreage of trees has yet to come into bearing, and it is anticipated that within the next ten years this quantity will be doubled. Harcourt stands out in marked contrast to other fruitgrowing centres of the State, as in most of these production is decreasing.

The figures for the State show that the acreage of orchards showed a falling off of two thousand acres in 1928, as compared with 1927. The matter of distributing and marketing the crop in the near future will have to receive careful consideration by all concerned.—Jas. H. Lang, 16/12/28.

* *

Wandin.

The crop prospects for this coming season are good, writes Mr. J. M. Mitchell. All berry fruits have come on well. Plums erratic, some good, some very light. Cherries fair. Pears nothing to rave over. Apples

light. Peaches good. Apricots fair.

Compared with last year crops are decidedly better.

Wandin and district produces nearly every kind of fruit grown, but is famed mostly for its berry production. Berries include Strawberries, Raspberries, Logans, Blackberries, Gooseberries and Red Currants.

Roughly there are 200 acres in cultivation of the various sorts. Then there are Plums, Cherries, Pears, Apples, Peaches, Apricots, Passion Fruit, in fairly large quantities.

Woorinen (26/12/28).

Mr. P. G. Baxter advises as follows:—This district is mainly vinegrowing. Sultanas, Currants, Gordos, Waltham Cross, with some Purple Cornichon and Ohanez, and a small acreage of Peaches, Apricots, Prunes, and Citrus. The prospects for the coming season are good. Sultanas, Currants, Gordos, showing a

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Covent Garden, London, England

FRUIT BROKERS & COMMISSION SALESMEN

Financial Facilities Offered

APPLE and PEAR SPECIALISTS

MAKE YOUR SHIPMENTS THROUGH

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Who will give all information

ORCHARDISTS!

For Successful Fruitgrowing, Insist on Using
ALBAROL (Reg.) WHITE OIL

We place the following facts before your notice for perusal:—

ALBAROL is the Most Efficient Spraying Material
Manufactured, because:—

- (1) It can be used at any period of the year.
- (2) It can be sprayed on your trees during any time of the day, irrespective of prevailing weather conditions. **ALBAROL DOES NOT BURN THE FOLIAGE.**
- (3) Containing only heavy petroleum oils, scientifically combined at our Laboratories, **ALBAROL** allows for a perfect covering of all the tree.

ALBAROL used at the astounding strength of 1 in 100 has given complete and effective results.

ALBAROL will kill your scale pests, etc. White louse are completely eradicated by spraying with **ALBAROL**.

Codlin moth control.

Used with the standard control (Arsenate of Lead)

—**ALBAROL** kills codlin moth grubs.

Under the old regime, three to five sprayings with Arsenate of Lead were necessary every season. **ALBAROL** lessens the number of sprayings to two or three annually. The full value of this saving of labor and expense is well understood.

ALBAROL serves as a check to scale pests, etc. **ALBAROL** guarantees clean fruit. No "wiping" before packing is necessary.

REMEMBER THE STRENGTH, 1 in 100.
HARBAS RED SPRAYING OIL and HAROLA LIME SULPHUR SOLUTION.

We Are Also the Manufacturers of:—

INSECTO (Sulphate of Nicotine).

NATIONAL BORDEAUX POWDER.

"NOSCO" WEED KILLER.

RESIN and SODA WASH, Etc., Etc.

Sole Agents of Australia for Hemingway's English Arsenate of Lead (Paste and Powder).

Write for Literature concerning our Manufactures.

LANE'S LIMITED

ABERCROMBIE & LEVEY STREETS - - - SYDNEY

Agents Everywhere.

crop well above the average, with Waltham Cross and Ohanez showing a light crop.

Last year many growers were hit badly with frost, but the coming prospects compare well above the average year.

Owing to favorable weather conditions, etc., the fruit is filling out well, and given good weather conditions for the harvesting, growers are expecting to produce the much desired good quality fruit.

The local packing shed (Woorinen Fruitgrowers' Co-op. Co.), the only

shed in the settlement, has installed a 60 ton stemmer and grader, in place of the 40 ton one; it is hoped to give the grower more satisfaction by a quicker return of his boxes.

Last year the tonnage of dried fruit was in the vicinity of 2,000 tons, and given favorable weather, the tonnage will be a good deal larger this coming season.

It is some compensation for great evils, that they enforce great lessons.

CHARGES NOT EXCESSIVE.

Say Overseas Brokers.

In answer to the intimation from Tasmanian fruitgrowers that charges were heavy, and unnecessary expenses are incurred with regard to consignments, a conference of overseas brokers, said that present charges could not be reduced. They contended that charges were not unreasonable after comparing such charges with those for handling similar commodities from other countries. The conference was held in London, and was attended by the Agent-General for Tasmania.

Fruit and Ornamental Trees

Grown for Sale by

C. A. Nobelius & Sons Pty. Ltd.

Gembrook Nurseries,
EMERALD, VICTORIA

Telephone: Box Hill 154

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Catalogues
showing
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Vic. Rep. Consignments solicited * Advances if desired
BARKER, GREEN & PARKE PTY. LTD., 533 Collins St., Melb.

BETTER PACKING
for
EXPORT



This valuable illustrated booklet, "Better Packing for Export," is obtainable gratis on applying to the Gerrard Wire Tying Machines Co. Pty. Ltd., 119 Hawke-street, W. Melb., Vic., or to the address on p. vi. of this issue.

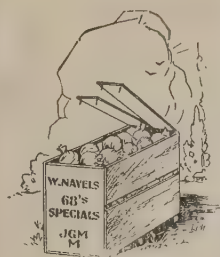
£240,000 PROFIT.

The profits made last year by the Covent Garden Properties Co. Ltd., London, was £240,000.

After the payment of taxation, debenture interest and various dividends, including a special dividend of 10 per cent., less tax, on the deferred ordinary shares following conversion, there was a balance of £31,910/12/8.

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PATENT ATTORNEY

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There's Plenty of Room at the Top

There's plenty of scope for the man who concentrates on the production of the highest grade of farm, orchard, or garden produce. The market for the BEST never seems to be over-supplied. But the problem of bringing QUANTITY and QUALITY closer together there's the "catch."

Use Sulphate of Ammonia

(Nitrogen in its ideal form), and watch its happy influence on both aspects of production—yield and quality. Progressive men those who lead in the agricultural and horticultural industries, are liberal users of SULPHATE OF AMMONIA. They have found that Sulphate pays. You will too. Try out a small experimental quantity this year.

Literature from

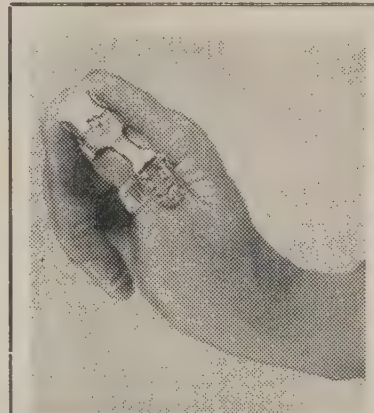
THE METROPOLITAN GAS COMPANY,
196 Flinders Street, Melbourne.

SA 12/28

ROADSIDE FRUIT SALES.

Retailers Say the Public are Hoodwinked.

The Melbourne and Metropolitan Fruiterers' Association, is taking steps to prevent roadside sales of fruit on Sundays. The Association states the public are hoodwinked with inferior fruit. Sunday trading was a breach of the law, though in many cases it was winked at. The rapid growth of roadside trading had imposed hardships on fruit retailers.



Patent "THUMB-NAIL"

GRAPE PICKER

Comfortable, untiring, and unbreakable; enabling great increase in speed, with both hands

Victorian Agents—

F. R. MELLOR.

440 Elizabeth St., Melbourne.

Commonwealth Sole Agents—

HORN & CO.,

Hardware House, Melbourne.

Grubs and Eggs in Dried Fruit

are the terror of the fruitgrower, the grocer and the consumer. All dried fruits, nuts, etc., coming into Australia should be sterilised to kill all the grubs and eggs present. As all insect life and eggs

Can be Completely Eradicated

by the Hydro Vacuum process, Australian Dried Fruit could be so treated, and sent out in sealed containers to prevent re-infection. With such delightful, clean fruit, public confidence would be gained, resulting in mutual satisfaction and bigger trade. The old-time fumigating system has been rendered obsolete

By the Sterilizing Process

perfected in Victoria and patented through the Commonwealth. Strict tests under Government supervision prove that this process is absolutely satisfactory in the destruction of all insect life and eggs in dried fruits, nuts, grain, borers in timber, eelworm and bulbmite in bulbs. This effective system

Of the Hydro Vacuum Fumigation Co. Ltd.

is in operation at the Company's works, Ingles-street, Port Melbourne. The penetration of the lethal gases is complete, without opening cases or cartons. Further, the goods are in no way harmed. Full information is contained in a descriptive booklet obtainable free on request. This contains report of demonstration on September 4, before Federal and State Government officials.—Write for your copy now. The Hydro Vacuum Fumigation Co. Ltd., officially registered as a Quarantine Station by the Plant Quarantine Department. Works: Ingles-street, Port Melbourne. Office: Temple Court, Collins Street, Melbourne, C.I. Phone: Central 2670.

Fighting Insect Pests in the Orchard

Cherry Green Beetle.

This is a native insect which has spread into orchards. They are very destructive to the foliage and fruit spurs of Apple, Cherry and other fruit trees. Spray with arsenate of lead, 1 in 25.

Black Aphids of Citrus Trees.

Keep a sharp lookout for these troublesome insects, which cluster in large numbers on the young growths of Orange and Lemon trees. They suck the sap from the young growths, which often turn black and die. Spray with nicotine sulphate or black-leaf 40. The young tips of the foliage should be thoroughly sprayed.

Looper Caterpillars.

Small brown looper caterpillars are in fair numbers on Apple trees. These insects often cause much damage as they eat holes in young Apples, Pears, etc. One caterpillar will often eat a small hole in dozens of Apples on a single tree. When the Apples are ripe these holes turn a russet color and disfigure the Apple, which looks as if it was affected with the fungus known as black spot of the Apple, etc. Spray same as for Cherry green beetle.

Painted Apple Moth.

The grey-tufted caterpillars of the moth are common at the present time in orchards. Fruit spurs of fruit trees are often badly damaged by them. They attack early Apples and, late in the season, do damage to, Yates Apples. If trees are

sprayed with arsenate of lead, the insects are soon got rid of.

Pinara or Snout Moth of Apple.

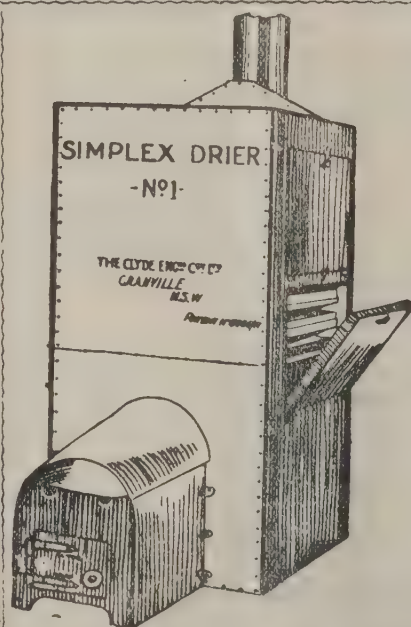
Fortunately these insects are not very common this season. When they do appear they cause a fair amount of damage to fruit spurs of Apple trees. The caterpillars are about 2 inches long, greyish in color, with fine hairs. The moths are light to dark brown, and have a prominent snout, hence the name "Snout Moth." The caterpillars cling tightly to the trunk or branches of the tree, and it is rather difficult to detect them as they closely resemble the bark. Spray with arsenate of lead.

Light-brown Apple Moth.

The small, active green caterpillars of this moth are now fairly plentiful in orchards, especially where Apples are grown. They usually attack Apples late in the season. Spray same as recommended for Pinara or Snout Moth of Apples.

Rutherglen Bug.

The hot weather has caused these very destructive plant bugs to make their appearance in orchards. To control these insects, use nicotine sulphate or black-leaf 40, or the phenyle spray. This is prepared as follows:—One quart phenyle, 3 lb. washing soda, 1 bar yellow soap, 40 gallons of water. The soap is shredded and dissolved in hot water. The other ingredients are added, and the mixture made up to 40 gallons. Benzole emulsion is also recommended.



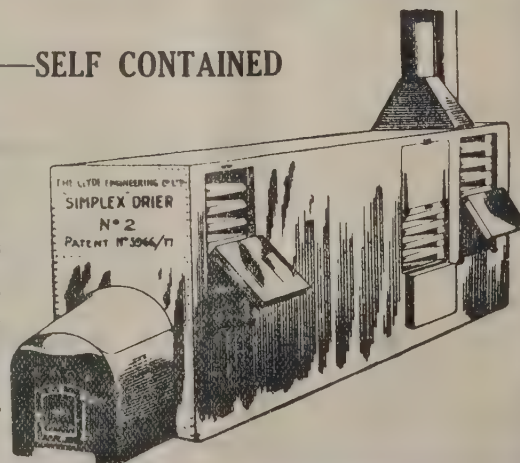
The Clyde Simplex Driers

For Drying
Fruit, Vegetables and other Products

NO MORE WASTE FRUIT OR VEGETABLES

SIMPLE — SELF CONTAINED

Made in Sizes to suit
Householders
Small Orchardists
or
Large Factories



The Clyde Engineering Co. Ltd.
GRANVILLE, N.S.W.

The Croydon and District A. & H. Society will hold their Autumn Show on March 22 and 23, 1929. This Society is building up a very fine Horticultural Display.

Fruit brought high prices in Perth in December. Yates Apples, 24/- to 30/6 per bushel; Oranges, 12/9 to 12/6; Apricots, 14/- to 25/-.

Stationary spray plants continue to give satisfaction in New Zealand. It is surprising that these have not yet been developed in Australia.

SUPPORT CO-OPERATION

By Consigning your
FRUIT to the

Producers' Distributing Society Ltd.

(Late Coastal Farmers' Co-operative
Society Ltd.)

— Agents for —
"BLACK LEAF 40"
and all Orchard Requirements

Melbourne Sydney
Newcastle Hobart
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BERRY BASKETS

Growers Supplied with All Kinds
Of Berry Baskets, Crates, etc.

Strawberry and Raspberry Boxes,
£2 per 1,000, less 5 per cent.

Crated at Spencer Street Station.

Every Box Guaranteed Sound and Standard Size.

Tomato Seedling Boxes, £2/5/- per 1,000.

We are makers of the United Berry-growers'
Association Regulation 12lbs. Bucket (non-
returnable).

Australian Berry Baskets Coy.

Factory, 175 Kent Street, Richmond.

Please mention "Fruit World" when sending
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H. LOUEY PANG & CO. PTY. LTD.

Fruit, Produce and Commission Agents

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(Also at Victoria Market)

References—E.S. & A. Bank, 225 Swanston St., Melbourne.

G.P.O. Box No. 795 Melbourne.

GOOD PRICES ASSURED

CHEQUES SENT DAILY—IMMEDIATELY CONSIGNMENT IS SOLD.

Reduction in Price of the NEW SYNTHETIC FERTILISERS Urea Diammonphos

46 per cent. Nitrogen as Urea.

20.6 per cent. Nitrogen as Ammonia.

52.5 per cent. Sol. Phosphoric Acid.

NITROGEN FOR FRUIT TREES is best applied in either of these forms, because:—

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| (1) They leave no useless matter in the soil. | (3) They are immediately available. |
| (2) They save cartage, handling, and distribution costs. | (4) Their effects last. |

IDEAL for swelling and coloring Fruit, and for Autumn application to CITRUS Trees.

Consult your Local Agent, or Write to Us for New Prices and Particulars.

DYES & CHEMICALS [Aust.] LTD.

573-585 Lonsdale Street, Melbourne

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The Fruit Trade

Market Reports and News Items

REPRESENTATIVE FIRMS. FRUIT MERCHANTS, AGENTS, EXPORTERS.
Advertising in this Journal.

NEW SOUTH WALES.

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Chilton, F., City Fruit Markets.
Louey Pang & Samuel Wong Ltd.,
Thomas St., Haymarket.

VICTORIA.

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Andrew, Fred J., 416 Lit. Collins St.
Cave, F., & Co., Melbourne.
Davis, J., Western Market.
Dennys, Lascelles Ltd., Temple Court,
Melbourne.
Mills, A., & Sons, Western Markets.
Mister, G., Western Market.
Mills, J. B., & Co., Bank House, Bank
Place Melbourne.
Mumford, J. G., 449 Flinders Lane.
Pang & Co. Ltd., H. L., Little Bourke
Street.
Producers' Dist. Society, Western
Market.
Ross, J. W., Western Market.
Silbert, Sharp & Davies, Western
Markets.
Stott & Son, T., Western Markets.
Tim Young & Co. Pty. Ltd., Western
Market.
Vear, F. W., 49 William Street.
Woolf, G., Western Market.
Wholesale Fruit Merchants Assn., J.
D. Fraser, Temple Court, 428 Col-
lins St., Melbourne.

QUEENSLAND.

Brisbane.

Barr, A. S., Fruit Exchange.
F. B. Bolton.
Collard & Mackay, Fruit Exchange.
Comino Bros. Ltd., Fruit Exchange.
Cooksley & Co., Fruit Exchange.
Geeves, H. V., Fruit Exchange.
Robsons Ltd., Fruit Exchange.
W. J. Whitten & Co., Fruit Exchange.

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Hobart.

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Jones & Co. Ltd., H., Fruit Exporters.
Peacock & Co., W. D., Fruit Exporters.
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Piesse & Co., C.

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Bender & Co. Pty. Ltd., 100 Elizabeth
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NEW ZEALAND.

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Co-operative Fruitgrowers' of Otago
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Monro, Geo., Ltd., Covent Garden.
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den.
Poupart, T. J., Covent Garden.
Ridley, Houlding & Co., Covent Gar-
den.
Swann & Co., 3 Salter's Hall Court,
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White & Son Ltd.
The Port of Hull, London and N.E.
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Bridge St., Sydney.

Manchester.

The Port of Manchester, rep. W. J.
Wade, 8 Bridge Street, Sydney.

GERMANY.

Bremen.

Fruchthandel, Gesellschaft.

Hamburg.

Astheimer, P. H., & Son, Fruchthof.
Lutten, J. H., & Sohn, Hamburg.
Stier, Aug., Fruchthof, Reps. J. B.
Mills & Co., Bank House, Melbourne.
Timm & Gerstenkorn.

English Fruit Sales.

Liverpool (7/11/28).

Messrs. J. C. Houghton reported on
November 7, sales of American barrel
Apples as follows:—Virginian, 13/- to
22/-; Nova Scotia, 15/- to 30/-; Box
Apples—Oregon and Washington, 6/-
to 14/-; Californian, 8/-; British
Columbian, 8/6.

Pears—Canadian, 27/- to 34/6 bar-
rel; boxes, 6/- to 15/9; Oregon and
Washington, 11/- to 13/6.

Oranges—South African: Late Val-
encias, 19/- to 20/6; Jaffa, 8/6 to 14/-.

Lemons—Palermo, 7/6 to 11/-;
Malaga, 10/- to 16/3; Tripoli, 7/3 to
11/6.

Germany.

Hamburg (15/11/28).

Ph. Astheimer & Sohn, fruit brok-
ers, Hamburg, report sales of 13,668
boxes, and 1929 barrels of American
Apples. Extra fancy Winter Ban-
anas, 11/3 to 13/- per bushel; Deli-
cious, 8/9 to 11/-; Spitzenberg fancy,
9/6 to 10/6; barrels, 20/- to 29/6.

Australasian Markets

NEW SOUTH WALES.

Sydney (31/12/28).

Apples—Local, dessert, extra choice
to 18/- per bushel case, choice 12/-
to 14/-, medium 6/- to 9/-, small 2/-
to 4/-; cooking, choice 10/- to 12/-,
medium 6/- to 8/-, small 2/6 to 4/-;
Yates 5/- to 12/-. Apricots—Local,
2/6 to 8/-, irrigation area 6/- to 8/-
per half-case; Vic., ripe 3/- to 6/-,
choice 8/- per bushel case. Citrus
Fruits—Lemons, local, colored, extra
choice 15/-, choice 10/- to 12/-,
medium 6/- to 8/-, small 4/- to 5/-;
Victorian, 12/- to 20/-; Oranges,
Valencias, extra choice 11/-, choice
8/- to 10/-, medium 5/- to 7/-, small
3/- to 4/-. Cherries—Light 3/- to
6/-, dark 6/- to 8/- per quarter-case.
Figs—Common 3/- to 5/-, dark 4/-
to 6/- per quarter-bushel case, Grapes

—White 7/- to 10/-, Black Hamburgs
to 18/- per half-case. Nectarines—
4/- to 12/-; irrigation area, 6/- to
10/-. Passion Fruit—Extra choice
10/- to 11/-, choice 7/- to 8/-, medium
4/- to 6/-, small 3/-. Peaches—Ex-
tra choice 10/- to 12/-, choice 7/- to
9/-, medium 4/- to 5/-, small 3/-;
irrigation area, 6/- to 10/-. Pears—
Local, Williams 4/- to 14/-; irriga-
tion area, Clapps, 7/- to 9/-; Vic.,
Williams 12/- to 14/- per bushel case.
Pineapples—Queens 8/- to 16/-, Rip-
leys 8/- to 12/- per case. Bananas—
Extra special 36/- to 40/-, special
30/- to 34/-, choice 24/- to 28/-,
standard 16/- to 20/-. Plums—Light
2/6 to 8/-, dark 4/- to 8/-, special
12/-, red 2/6 to 11/- per half-case,
jam 4/-; Vic., Angelinas, 10/- to 12/-
per bushel case.

Victoria.

Melbourne (2/1/29).

The following wholesale prices, sup-
plied by the Wholesale Fruit Mer-
chants' Association of Victoria, are
those which ruled in the Western
Market for average quality fruit.
Some special lines brought higher
prices, but considerable quantities
were sold at lower prices, owing to
inferior quality, bad packing and
grading. Apricots, 2/- to 5/- per
case; green Bananas; Queensland,
special, 28/- to 30/-; choice, 22/- to
27/-; standard, 16/- to 20/- per double
case; Lemons, 5/- to 10/-; Valencia
Oranges, 9/- to 14/-; Passion Fruit,
Queensland, 10/- to 16/- half case;
Peaches, 5/- to 9/-, a few special
higher; Plums, 3/- to 5/-; Pineapples,
Queens, 14/- to 22/-; rough, 12/- to
18/- per double case; Tomatoes, 8/-
to 12/-, a few higher.

V.C.C.A. Report

Melbourne (28/12/28).

The V.C.C.A. Melbourne market re-
presentative, Mr. Kitchen-Kerr, re-
ports as follows on the citrus mar-
ket for the last week:—

The citrus market has been dull
during the week. Full supplies of soft
fruits have been available, and the
high price of same has restricted re-
tailers' purchases with the result that
sales of Valencias have been limited
to the better lines. Sales were as
follows:—Valencias, standard, 8/- to
13/-, special 14/-, extra selected 15/-
and 16/-; Lemons, country, best
counts, to 10/-.

South Australia.

Adelaide (26/12/28).

Apples, eating, 6/- to 7/- per case;
cooking, 4/- to 5/-; Apricots, 6/-;

Bananas, Queensland, 30/- to 32/-; Cherries, dark, 21/-; light, 15/-; Lemons, 10/- to 12/-; Almonds, 11/- per doz. lb.; Brazil nuts, 12/- per doz. lb.; Peanuts, 11/6 per doz. lb.; Walnuts, 12/- per doz. lb.; Barcelona nuts, 12/- per dozen lb.; Oranges, Common, 9/- to 10/- per case; Navel, 14/- to 16/-; Peaches, 10/- to 12/-; Plums (light), 7/- to 8/-.

QUEENSLAND.

Brisbane (31/12/28).

Local Fruit.—Stanthorpe Peaches, 6/- to 8/- a quarter case; Plums, 9/- to 12/- and 4/- to 7/-; Black Diamond, 4/- to 6/-; Apricots, 10/- to 15/-; Nectarines, 6/- to 9/-; eating Apples, 8/- to 10/- a bushel case, special colored Grav., 12/- to 14/-; cooking, 4/- to 8/-; Papaws, 4/- to 8/- and 2/- to 3/-; Pines, smooth, 9/- to 14/-; rough, 7/- to 10/-; Passion Fruit, 5/- to 8/- a quarter case; Mangoes, 6/- to 8/- a case; Grapes, Black, 3½d. to 5d. a lb.; Isabella, 3d.; Iona, 3d. to 4d.; White, 3d. to 3½d.; Watermelons, 2/- to 27/- a doz.; Rockmelons, 1/- to 15/-. Imported Fruit.—Apples, Tas., Dem., 14/- to 15/- a bushel case; S.T.P., 10/- to 12/-; F.C., 6/- to 10/-; Vic., Yates, 8/- to 12/-; Lemons, Californian, 42/- a double case; South Aus., 20/- to 23/- a bushel case; Vic., 20/- to 23/-; N.S.W., 15/- to 20/-; Oranges, N.S.W., 12/- to 14/-; American Navel, 45/- a double case; Apricots, 8/- to 14/- a quarter case; Cherries, 12/- to 15/- a box.

Western Australia.

Perth (17/12/28).

The Producers Markets Limited report sale as follows:—Good fruit supplies forward for to-day's auction to a keen demand. Valencia Oranges and Lemons held at previous sales high values. The quality of Peaches and Apricots improved, with very firm values. Firm lines of Tomatoes in demand, packers operating for country clients influencing values. Apples sold at late rates.

Fruit.—Apples, dumps, Yates, 24/- to 30/6; small, from 18/-; Valencias, Dumps, 12/9 to 21/6; ¾ bus., 11/- to 15/-; spec., 17/3, others from 6/9; Lemons, ¾ bus., 12/- to 19/-, others from 9/6; Peaches, 15/- to 26/-; special, 35/6; Apricots, 14/- to 25/-, special to 32/9; ¾ dumps, 13/3 to 17/-; Figs, ¾ bus., 5/- to 12/3; Cherry Plums, 11/- to 17/-; Red Plums, ¾ dumps, 9/- to 18/3; Cherries, light, trays, 8/6 to 10/-; dark, 13/- to 15/-, special to 27/-; Strawberries, 11/9 to 14/3 doz.; Grapes, open, 9/6 to 13/9;

Capes, 7½d.; Tomatoes, ¾ bus., 9/- to 18/-, special to 21/6, inferior from 5/-.

Tasmania.

Hobart (15/12/28).

Apples, Delicious, 7/- to 9/-; C.P.M., 7/- to 8/-; S.T.P., 3/- to 9/-; N.Y.P., 2/6 to 3/-; F.C., 2/- to 3/-; Democrats, 4/- to 7/6 per case; Gooseberries, 2/6 to 4/6 half-case; Cherries, best Florence, 25/- to 30/-; Bigareau, Early Lyons, blackhearts, best lots, 14/- to 20/- half-case; medium and small quality, 8/- to 13/- half-case; May Duke, 8/- to 13/-; Kentish Cherries, 7/- half-case; Cherry Plums, 2/- to 4/6 half-case; Strawberries, 6d. to 1/- per punnet; Raspberries, 9d. to 11d. punnet.

New Zealand.

Dunedin (28/12/28).

Reilly's Central Produce Mart reports as follows:—The market during the holidays has been erratic, though steady sales have been made for Australian Valencia Oranges at 14/- to 18/6 per case. There has been practically no other fruit from Australia on the market, but at the moment there is a keen demand for Late Cherries, which are realising from 1/2 to 1/7 per lb. Early consignments of choice William Bon Chretien Pears should command good values.

INTERSTATE FRUIT TRAFFIC.

Suggestion for Overcoming Break-of-Gauge Problem.

Mr. J. M. Jacobs, Western Market, Melbourne, has projected an idea for saving the double handling of fruit at the break-of-gauge at interstate borders. Mr. Jacobs suggests that the fruit be loaded into iced containers movable across the platform from one train to the other. These containers would be suitable for other produce when not needed for fruit.

Mr. Jacobs proposes that a conference of fruitgrowers be called to consider the subject.

TRADE NOTES.

Last season's Apples are still selling in West Australia at 19/- per case wholesale; retail price, 8d. per lb.

Over a quarter of million cases of new season West Australian Apples have been sold outright for export to England and the Continent for 10/6 per case, f.o.b.

Small Apricots, mostly Oullins, completely ruined, prices at the Western Market, Victoria, this season:—Medium to large Apricots were realising good prices until the small fruit started to arrive. Buyers immediately dropped their prices and would not buy. The buyers will not operate, and the public do not want small Apricots, and it is to be regretted that this fruit is sent on to the market at all.

Useful Machinery.—Attention is directed to the useful machinery offered in the advertisement of McPhersons Pty. Ltd., of Melbourne, Sydney and Adelaide. The lines offered include Cahoon's seed sowers, Macson earth scoops and green feed cutters. Details and prices are given of the special advantages of these useful orchard adjuncts. Further information is obtainable on application direct to the firm.

"Clensel."—Good results are being obtained by growers who use "Clensel" as a destroyer of insect pests and fungus diseases. Booklets and information can be obtained at the Clensel Co., 184 Queen-street, Melbourne, Vic.

GRUBBING



Thousands in Use

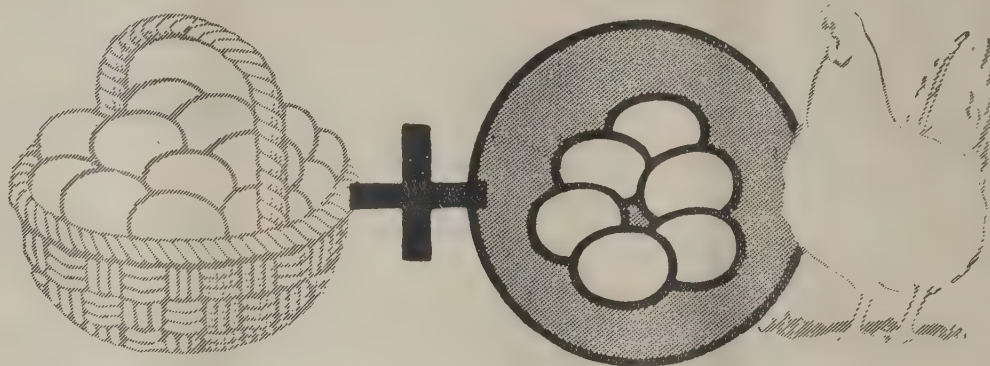
It earns its Famous **LOW PRICE** in a Few Days

Write for Catalogue

WITH A "DIGGER" WINCH

A Man can uproot more Trees and Stumps in a Day than he would dig out in Ten Days

QUICK MANUFACTURING CO., 75 Penders Street, Thornbury, Victoria



Eggs while moulting

IS this true of your fowls? Do they even lay during the last weeks prior to breaking into moult? It is true of many backyarders' fowls. It can be true of yours. If they are not laying now, give them Karswood Poultry Spice (which contains dried and ground insects). Karswood is a natural food- tonic which supplies fowls with those tonic ingredients which they need so much, including assimilable phosphorous. Assimilable phosphorous is the one ingredient essential for the formation and growth of large-sized eggs. Karswood cannot force, it contains no chillies, gentian, cayenne pepper, etc., or other forcing ingredient, but brings about its results in a perfectly natural manner.

In addition it provides the hens with sufficient reserves of energy to enable them to go through a quick and easy moult and even keep on laying through the moult. Read what this man says of Karswood.

"Great Help to Fowls"

Dear Sirs,

I have used your Poultry Spice for some time and find it very satisfactory, especially during the winter months and it is a great help to the fowls while they are moulting, and I can honestly say more than half of them layed while going through the moult. All my fowls look healthy and vigorous, thanks to your Spice.

You are at liberty to use this letter as you please.

*Signed, D. BONNER
Vesper Street, Mount Gambier
South East, S.A.*

"Never without Eggs"

Dear Sir,

I am a backyarder, and I am never without eggs winter or summer, thanks to your wonderful Spice which keeps my birds in good health and laying condition.

*H. J. SEYMOUR
26 Hamilton Street, West Hobart
Tasmania*

Note the Economy

1/- packet supplies 20 hens 16 days; 2/- packet supplies 20 hens for 32 days; 13/- (7 lb. tin), supplies 140 hens for 32 days.

Supplies

Karswood Poultry Spice is obtainable at all wholesalers and stores at the following retail prices:—½ lb. packet, price 1/-; 1 lb. packet, price 2/-; 7 lb. tin, price 13/-; 14 lb. tin, price 25/-; 28 lb. tin, 48/-.

Karswood Poultry Spice

increases egg-production without forcing. It does not contain cayenne pepper or any forcing ingredient.

36/FP/28



POULTRY.

Don't Delay Culling.

JANUARY is usually a trying month for birds of all ages. This, together with the fact that you will probably be carrying a big stock, is sufficient to indicate that there must be no weakness in management. Do not delay culling all surplus cockerels that have reached the age of five months. Getting rid of them means better conditions for the remaining stock, saving of labor, and a saving of money.

It should be remembered that once a bird passes the chicken stage, it costs more to feed and grows less in value each day.

Green Food.

For both growing and adult stock, an ample supply of green material is necessary if the birds are to maintain good health. Besides being health-giving, green food is cheaper than most chicken foods, and thereby lessens the cost of production.

Finely chaffed lucerne, clover, or green oats provide a splendid food for birds of all ages, while watercress, silver beet and cabbage are also suitable. Protect the green food from the heat of the sun. Dried-up food is not readily eaten by the birds.

The Growing Stock.

The growing pullets must be given the best of care at this period, so that they may not fail in their future function of producing late autumn and winter eggs. The slightest setback to a growing bird is never caught up. Birds must not be forced to prematurity. It is time enough to begin feeding a forcing diet when the birds are well developed and are fit to stand the strain. An undeveloped pullet cannot be expected to commence laying at an early age, and at the same time make further growth. As a matter of fact, the pullet nearly always ceases to grow when she starts to lay. This is because the energy required to reach maturity will obviously have been diverted to egg-formation. Pullets of any breed should be prevented, if possible, from commencing to lay until they are at least six months old.

Rich Foods a Mistake.

The inclusion of rich foods, such as meat, in the ration of growing fowls is a mistake. Pullets should be fed as well as possible, but on a plain diet of sound grain materials, with plenty of green food always available.

The only safe way of making sure that the young birds get all the food they require is to have food in a dry state always before them. One part good quality wheatmeal and two parts bran will provide a good dry mash mixture.

For keeping young birds steadily growing, there is no better food than good plump oats, preferably shelled. It is absolutely essential that growing birds are not tortured by vermin. Give their quarters a frequent spray with a strong disinfectant.

Laying Stock.

It has been said that if you overfeed some birds, they will put on fat and stop laying. It is impossible to overfeed proper laying types. Stock that get fat are not of the correct laying type, and are obviously not interested in egg production. In other words, they utilise the food consumed to make flesh and fat, while the good layers convert it into eggs.

If any argument is required to disprove the common fallacy that the heavy producing bird can be overfed with the right class of food, it is surely the fact that the thinnest birds at this time of the year are the heaviest layers in the flock.

If a bird is to lay eggs almost every day for the greater part of the year, she must have the material to do it with, and at the same time have sound health to withstand the strain on her constitution. It is always a sound policy to reduce the flock rather than reduce the ration.

Good Layers Are Contented.

It is not to be wondered at that birds who are kept on a mere living diet make every possible effort to get out of pens to a free range, to search for the food that nature demands—green feed, grit, or egg-forming material—if these are under-supplied.

The good laying bird must be contented; only in this condition can she be expected to do her best. To

achieve this, good food, and plenty of it, is essential, but it is equally necessary to have comfortable, well ventilated clean houses, free from insect pests.

BEEKEEPING.

Swarming.

THE MOST IMPORTANT work engaging the attention of apiarists at this season is that of checking the impulse of the bees to swarm. This operation, together with preparations for an active honey-flow, is likely to crowd the beekeeper's time.

For the production of maximum output of honey, all experienced beekeepers admit that swarming should not occur, and while skilful attention is required to eliminate it altogether in most apiaries, it is a common occurrence.

It is natural for bees to swarm. Were it possible to understand the natural condition that suggests to the bees that they should swarm at this season, our efforts to control it might be successful. Many theories have been advanced. Lack of ventilation, overcrowding, and the presence of old bees in the hive being some of them.

With regard to ventilation, an effective method is to place inch blocks under the two front covers of the brood-chamber. In the very flush of the honey flow, additional ventilation may be given by drawing out of the supers forward over the rest. This forms two additional entrances, and permits the workers to escape to the fields without having to traverse the whole depth of the hive.

Space for the storing of honey and additional room for the queen to lay in, must be provided in advance of the colonies' requirements. A suitable plan is to give a new brood-chamber, comprising two frames of hatching brood, the remainder being frames of foundation or drawn-out combs. Secure the queen and confine her below an excluder in the new chamber, then place the old brood-nest directly above, thus giving additional work for the young bees, and plenty of room for the queen to lay in.

Young queens are essential factors in the successful control of swarming. Colonies show less inclination to swarm where the queen is of the current season's rearing. Every effort should be made to re-queen early in the spring, or, if this is not possible, to head each colony with a young queen early in the autumn. If this plan is followed, swarming will be considerably reduced.

SALES DEPOTS:

No. 542-543 Covent Garden Market.
No. 97, 98, 101 Long Acre.
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Cables—Spinach, London.
Codes—A.B.C., 5th Edition; Bentley's.

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LONDON CALLING FRUITGROWERS !!!

Consign your Fruit to

PASK, CORNISH & SMART

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LONDON, W.C.2, England

THE PROGRESSIVE FIRM of FRUIT SALESMEN

Who receive consignments of Apples, Pears, Oranges, and Grapes all the year round, thus assuring a clientele of best buyers. Spacious Sale Rooms suitably situated to display fruit to very best advantage.

Reasonable advances made against Bills of Lading. Balances paid by cheques drawn on Australasian Banks.

Sales entirely by Private Treaty

Last year handled more than TWO MILLION Packages of English, Colonial and Foreign Fruits.

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And all Principal Fruit Growing Centres in Engl and, France, Spain, Belgium and Holland.

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REPRESENTATIVES REQUIRED in S. Australia, Victoria & W. Australia.

Clean Fruit Assured

When Neptune Sprays are Used

NEPTUNE
Prepared Spraying Oils
"A" and "C"

NEPTUNE
Lime Sulphur Solution

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Spray Spreader

BERGER'S
Arsenate of Lead
(Paste and Powder)

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GENUINE
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SICILIAN
Sublimed Sulphur

AUSTRALIAN
Powdered Sulphur

MAXIMUM RESULTS—
MINIMUM COSTS



All NEPTUNE SPRAYING MATERIAL can be obtained
through Agencies and Associations throughout Australia
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BRANCHES

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"THE POUPART SALES SERVICE"

FRUITGROWERS THE WORLD OVER Avail yourselves of the POUPART SELLING ORGANISATION

In 1926 the T. J. POUPART SERVICE handled over 4,000,000 packages of fruit and paid £200,000 for freight.

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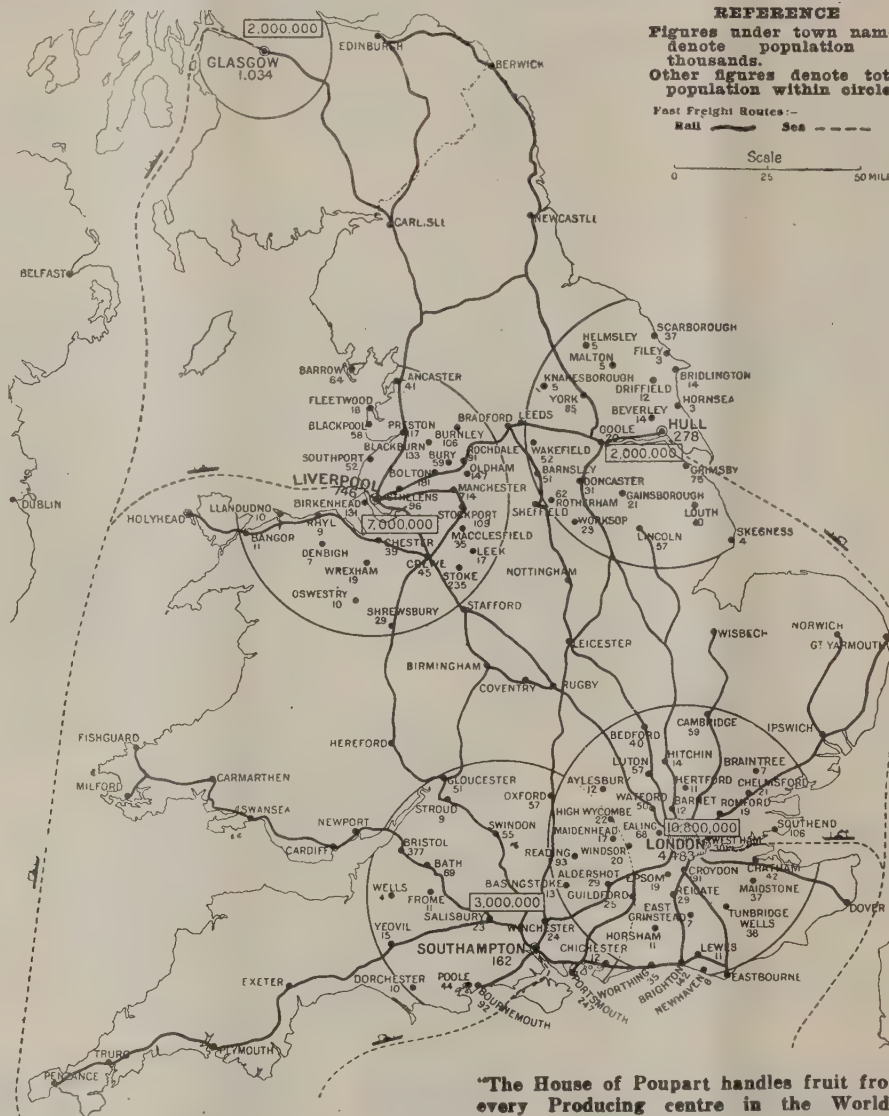
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"The House of Poupart handles fruit from every Producing centre in the World."

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LONDON - LIVERPOOL - HULL SOUTHAMPTON AND GLASGOW

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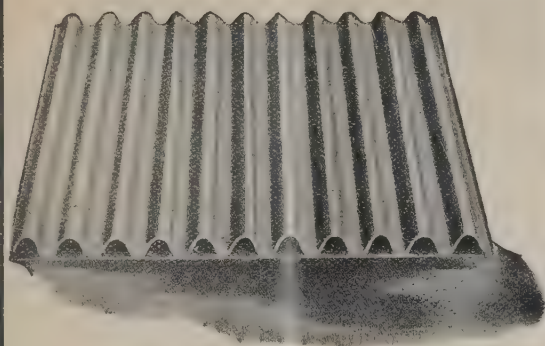
Victorian Growers ship through Fred J. Andrew, 416 Little Collins Street, Melbourne.

South Australian Growers ship through A. W. Bowen & Co., Commercial Building, 9 French Street, Adelaide.

Western Australian Growers ship through Harvey G. Rae, 1 Thomson Road, Claremont, W.A.

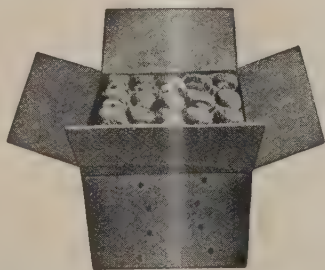
New South Wales Growers ship through C. Geo. Kellaway & Son, Office 25, City Fruit Markets, Sydney

New Zealand Growers ship through Griffin & O'Brien, P.O. Box 104, 89 Hardy Street, Nelson.



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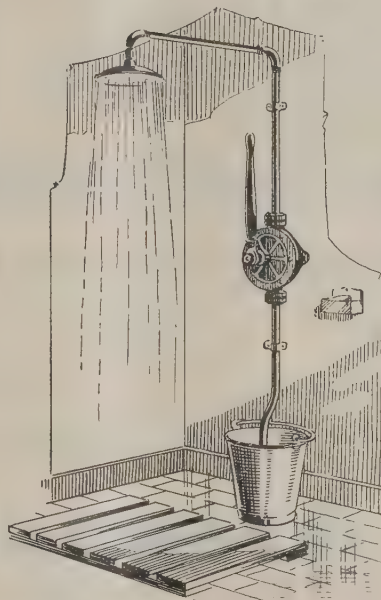
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**CORRUGATED CASES
SUITABLE FOR FRUIT PACKING**

Full particulars on application to
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SYDNEY, N.S.W.

Keep Cool!



Even though water is scarce there is no need to sigh in vain for a refreshing, cooling shower.

Our "Macson" Bush Shower Outfit is made especially for use where the supply of water is limited. A Semi-Rotary Pump gives just the right flow, and does not cause undue waste. Easily erected, and can be quickly shifted to any desired spot.

Price, with $\frac{3}{4}$ -inch pipe and fittings 37/6

With $\frac{1}{2}$ inch pipe and fittings 42/6

Send for our Pump Catalogue. It will be sent

Post Free.

CATTLE CLIPPERS.

For clipping Horses, Cows, &c., the "Stewart" Clipping Machine is unsurpassed. Easily worked, cuts very rapidly, and all parts are made of high-grade material. Will last a lifetime, and pay for itself over and over again in increased work from the horses, cleaner milk from cows, less ill-health, &c.

Send for further particulars.
All spare parts always in stock. New blades, 12/6 per pair.

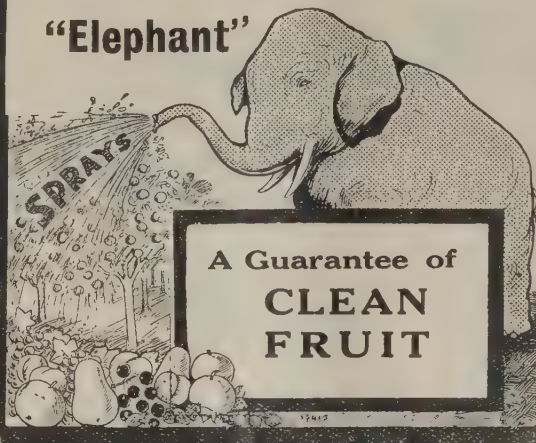
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51-55 Bathurst St., Sydney—116-130 Waymouth St.
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ORCHARDISTS

Spraying is essential, and your best Insurance. Therefore it is necessary to use only the Best Sprays obtainable.

The successful grower uses

"Elephant" Brand

Sprays Only

Don't Neglect Your Spraying

The fruit crop is light and Apples will be scarce and dear next season, therefore spray thoroughly and frequently with

"Elephant" Brand

Arsenate of Lead

Paste and Powder

Remember! Spraying thoroughly not only saves your apples this season but reduces the number :: of Codlin to contend with next season ::

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JAQUES PTY. LTD.,

are the Actual Manufacturers and Distributors of "Elephant" Brand Sprays
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ORANGES

LEMONS

MANDARINS

MULBERRIES

CHESTNUTS

GOOSEBERRIES

CURRANTS

RASPBERRIES

NUTS

MEDLARS

POMEGRANATES

PASSIONS

OLIVES

GUAVAS

BRAMBLES

LOQUATS

PERSIMMONS

VINES

STRAWBERRIES

RHUBARB

LOGANBERRIES

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All Leading Varieties from—

JOHN BRUNNING & SONS

Somerville Nurseries

Somerville, Victoria, Australia

ESTABLISHED 1866

One of the Largest Exporters of Fruit Trees to Overseas Clients in the Trade.

"FRUIT WORLD OF AUSTRALASIA."

Representing the Deciduous, Citrus and Dried Fruits Industry of Australasia.

Published the First of Each Month.

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Changes of copy for advertisements must be in our hands on or before the 12th of the month prior to publication.

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A NEW ENGLISH APPLE:

King George V.

Raised from a pip of Cox's Orange Pippin by Lady Thornicroft, this is totally different from the seed parent in appearance and the flowers may have been crossed with another variety. The fruit is of good average size for a Cox's Orange Pippin, but broader than deep, with long, green calyx lobes that do not completely close the eye. The skin is pale green with a flush of red on the sunny side. The flavor is as good as that of Cox's Orange Pippin and when that is getting too old, King George V. takes its place in February and remains good through March and April. The Award of Merit had been previously recommended and the Fruit Committee confirmed the award at the fruit and vegetable show.—"Fruitgrower," London.

NEW AMERICAN APPLES.

Among the many new varieties of fruit displayed at the tenth annual meeting of the New York Fruit Testing Co-operation Association at the Experiment Station at Geneva recently three new Apples won instant favor with members of the Association. These were Milton, a new McIntosh-like Apple, Red Gravenstein, and a new Red Astrachan known as No. 2,391.

Science and Agriculture.

Necessity for Continued Research.

(By Sir John Russell, Director Rothamsted Experimental Station, England.)

Continued from page 3 January Fruit World.

How Production Has Increased.

As the result of improvements that have been effected in crops, machinery, methods of soil treatment, and fertilising crops the yields in England have risen considerably since the work first began. They now stand at these levels:—

For wheat the general average is 31.2 bushels an acre, and the good farmer expects 40-50. For barley the general average is 30.7 bushels an acre, and the good farmer expects 50-70. For oats the general average is 30.8 bushels, and the good farmer expects 60-80. For potatoes the general average is six tons an acre, and the good farmer expects 10-12. One acre of poor grassland may carry one sheep, medium land six sheep, and good land eight sheep. About 160 gallons of milk an acre of grass was not an unusual yield. Under better treatment 400 gallons can be obtained, and with good grassland the yield rises to 600 to 1,000 an acre.

Some of the greatest achievements of science have been in the direction of bringing into cultivation parts of the earth formerly regarded as waste. First, it is necessary to discover the cause of the trouble. The old bed of Lake Aboukir is an example of land rendered barren by the large amount of salt in the surface soil. It has, however, been brought into cultivation by a small group of Englishmen, who, tapping the Nile at high tide, flooded the land, arranged for adequate drainage, and having thus removed the salt, planted the area. Large crops of cotton, wheat, and clover can now be obtained, and the area so far reclaimed is carrying a population of agricultural workers and small holders. The flooding, however, has to be done very carefully, otherwise serious troubles arise, to which I shall refer in my next lecture.

Overcoming Water Difficulties.

Another great difficulty now in part surmounted is the lack of water. Years ago it was supposed that a relatively high rainfall was necessary for any crop production. The first to show in recent times that this was not so were the Mormons, a religious sect who dwell in Utah, one of the western States of the United States of America. About 80 years ago they held certain views which did not commend themselves to the citizens of the other States, and being persecuted, they trekked to the west, intending to form a new State, finally reaching Utah—a dry region of valleys set in between mountains. There they developed a system of agriculture admirably suited to dry conditions. Part of the land is now irri-

gated, but some is unsuitable for irrigation, and is used for the productions of cereals and for grazing. Here they have succeeded in keeping the moisture in the soil by special methods of cultivation, and they have produced crops larger than anyone had thought possible under dry conditions. Other agriculturists have since become dry farmers, but the Mormons are still among the most efficient of them all.

Another way in which dry conditions are being met is by altering the plants themselves. Plants vary considerably in their water requirements. Millet requires about 300 pounds of water to produce one pound of dry matter; maize, 370 lb.; sugar beet, 400; wheat, 500; barley, about the same; oats, rather more; potatoes, more still; lucerne and grasses more still; and flax, most of all, about 900. Many figures have been obtained by American experimenters and by Dr. A. E. V. Richardson, of the Waite Institute, Adelaide, with whose work Australian farmers are well acquainted. These are the mean results for a large number of varieties, but the individual varieties vary considerably among themselves. Modern plant breeders are producing an economical type of plant, and there are now available to the farmer a number of varieties requiring less than these average amounts of water, and these are being used extensively in dry regions. Some have been produced in this country, and they have been successfully used in developing the wheat belt of Western Australia. Fortunately for the farmer, if he can increase the crop by any cultivation or manurial means, he does not correspondingly draw on the water supply. A large crop uses its water more efficiently than a small one.

Achievements of Irrigation.

The surest way of overcoming the water shortage, however, is to add water to the soil by irrigation, and that is being done in many parts of the British Empire to-day. One of the most notable areas is the Gezira, lying between the Blue Nile and the White Nile, in the Sudan. Formerly it grew but little, now, however, it is producing considerable supplies of cotton with the greatest certainty, simply because the water is given in sufficient quantities. Another great irrigation region is in California, where land which was formerly of little value is now made to produce large crops of valuable products such as fruit and vegetables.

Unfortunately, directly water is put on the soil certain changes may set in which may lead to the destruction of the whole scheme. I shall discuss the changes more fully in my next lecture.

They have two results: the soil may become very sticky and difficult to work; and salt may accumulate in the soil sufficiently to injure or to kill the plants. Among the reclamation projects of the world are many that have had to be abandoned, simply because of this terrible salt trouble. Up to the present science has shown how to get water on to the soil, but not how to solve the salt trouble completely.

Danger of Over-watering.

It is absolutely vital to success that the irrigator should use only the minimum amount of water, and every effort should be made to keep the water consumption to the lowest possible level. For generations Egypt has been successfully irrigated. The old method of irrigation carried on for three or four thousand years or more had, as far as is known, never given serious trouble. Under it the land was fully irrigated for the short time during the year when the Nile was at high flood. In the summer much of it lay dry and bare, exposed to the baking heat of the Egyptian sun. For those areas on which irrigation was needed

the water had to be lifted out of the Nile in buckets, worked by men or by bullocks, and as the work was laborious, there was no fear of excessive watering. But with the modern schemes water can be put on to the land all the year round. When this perennial irrigation first came into operation, the yields of cotton were high—about 500 lb. of lint cotton an acre. After a few years, however, they began to fall, and on some areas reached an unprofitable level. Up to the present science has offered no complete solution for this particular difficulty. It is, however, known that the water must not be put on in too large quantities, and at all costs, the water table in the soil must not be allowed to rise. Adequate drainage is absolutely essential in any irrigation scheme. Although science has done a great deal, there remains still a great deal to be accomplished, and intensification of a system of agriculture brings in new problems that have not been troublesome before. Science, in solving problems of increased production creates new problems of maintaining the increase.

(To be continued.)

FRUIT PACKING INSTRUCTION.

Appreciated Activity by Victorian Horticultural Division.

THE fruit packing classes inaugurated and conducted by the Horticultural Division of the Victorian Department of Agriculture, have won keen approval. Much good work has been accomplished. The Fruit Packing Expert is Mr. Basil Krone, and he is supported by capable assistants, Messrs. Gregory and Harris.

Classes for school children have been conducted in the following districts:—Somerville, Tyabb Upper, Tyabb Lower, Red Hill, Harcourt, Croydon, Ringwood, Mt. Waverley, East Burwood, Doncaster, Bunyip, Garfield, Campbell's Creek, Pakenham East Catholic School, Pakenham East State School, Pakenham Upper, Pakenham Army Road State School (all these districts are the names of State Schools).

In addition, applications are to hand from the Elphinstone and Harcourt North State Schools.

Individual prize winners at the Royal Show were:—Eileen Dennett, Somerville State School, first prize, Manson McAlpin, Ringwood State School, second prize; Rona Warren, Harcourt State School, third prize.

In addition to instruction being given to children, adult classes have also been held in various fruit-growing districts; these classes have been well attended and greatly appreciated. The net result has been a con-

siderable improvement in the grading and packing of fruit.

The photo. on this page shows the Ringwood State School Apple packing class, which won the Shield at the last Royal Agricultural Show.



Ringwood State School Apple Packing Class.—Prize-winners. Back Row (left to right): Reg. Farmilo, Peter Newell, Manson McAlpin, Eddie Blood. Front row: Desmond Pratt, Merle Nelson, William Cobbett.

REMARKABLE APPLE TREE.

37 Bushels Every Year.

Mr. G. W. Peart, Goodman's Nurseries, Bairnsdale, Vic., showed us a photo. of a remarkable Apple tree, which has been producing 37 bushels annually for the past nine years. This is a London Pippin variety, and is growing at the orchard of Mr. H. Heath, Senr., The Pines, Bairnsdale. The stock is Northern Spy.

ROYAL SHOW, SYDNEY.

Big Fruit Prizes.

Special Export Section.

The Royal Agricultural Society of N.S.W. will hold its annual show from March 27 to April 6, 1929. Among other important items, the Society has prepared a very attractive fruit schedule, there being special classes for export Apples and dried fruits. Liberal prize money is provided in all fruit classes. Entries close on March 1. Schedules and entry forms are obtainable from the Secretary, Mr. G. C. Somerville, Endeavour House, 33 Macquarie-place, Sydney.

Special export Apple prizes, open to growers throughout the Commonwealth, are offered as follows:—First prize, £15; second prize, £7; third prize, £3. A silver cup, valued at £25, will be presented by the Orient Steamship Navigation Co. to the first prize winner.

Messrs. Geo. Monro Ltd., Covent Garden, London, carried out the competition last year, and this resulted in a splendid advertisement for Australian Apples. The exhibits were judged by Major E. G. Monro, W. Greenwood, and W. Ravenhill. Messrs. Geo. Monro Ltd. have been invited to take charge of the competition in Melbourne, and have agreed to do so.

Codlin Moth Control.—Mr. W. Gurney, Government Entomologist for N.S.W., is reported to have stated in London, after exhaustive enquiries, that he found nothing supersedes arsenical spraying for dealing with the codlin moth.

Vines

Citrus Culture

Important Seasonable Notes from New South Wales.

VITICULTURE.

The "Yema" Bud.

Important Seasonable Operation.

THE method of working over resistant rootlings to marketable varieties by the "yema" bud, introduced into Australia some years ago from Spain, nowadays plays a very important part in the establishment of vineyards on commercial lines (states the N.S.W. Department of Agriculture). It has many advantages over both the bench-graft and the ordinary field (spring) graft. Being made in the form of a bud, a minimum of injury to the stock results, and a better union between the stock and scion. The stock, being already established, is better able to produce a good, strong shoot for the formation of the stem of the vine.

The operation of budding is done in January and February, and even to the end of March, according to the condition of the vine—a time when the sap is flowing so as to produce an excellent callus, that is, when the temperature is warm and the period of greatest vigor in the vine has passed.

The bud remains dormant until the spring, when it shoots out under normal conditions into very strong growth, having the advantage of a full growing season in front of it. An occasional bud may be found that remains dormant until the following year, and there are known cases (they are exceptional) of an odd bud remaining for two years before bursting.

Vines that are planted in the spring and that grow well throughout the season can be successfully yema-worked in the following January to March. In the case of weaker vines, it is advisable to leave the operation until the following year. The stock should be growing well with a fair flow of sap before an attempt is made to bud it.

Suitable Wood.

Scion-wood should be well matured and in size should equal, as closely as possible, the diameter of the stock. Supplies of scion-wood should be gathered from day to day so as to ensure them being fresh, and they should be wrapped in a wet bag until required. For convenience when

working in the field, cut the scion-wood from time to time into one-bud lengths, and carry them in a small bucket of water. A suitable bucket can be made from a kerosene-tin by cutting it on the full length, so as to give a shallow depth.

How to Cut the Stock.

The cutting of the stock may seem a little complicated, but an experienced man will bud and tie up to 400 vines per day, and look for a 95 per cent. take. A beginner should not attempt pace at the start, but be content with 50 to 100 per day.

To carry out the operation, first scoop away a little earth to form a basin around the stem of the stock, and about an inch above the level of the surface soil remove a piece of wood by the following method:—

First make a cut diagonally down into the stock, fairly deep, but not deep enough to penetrate the hollow of the cane.

Make a second cut by commencing at a point above the first cut, and cutting down and gradually in, and then straight down to the lower end of the first cut, thus cutting out a piece of wood.

Then a third cut straight up from the point where the second cut turned straight down, to a point a little higher up than where the second cut started from. Several cuts may be necessary to obtain the desired result at this stage; the important point is that the line of the third cut must be perfectly straight—it must not show a ridge.

The cutting of the stock is then completed by a fourth cut which is made from the same point as the second cut, but at a wider angle, again removing a small piece of wood.

Inserting the Bud.

The scion wood is now cut to conform to the shape of the stock (being pared to a sharp point from above the bud and to a wider angle below the bud), and inserted. After the bud is tied, fill in the soil carefully, covering the bud well over. The bud simply calluses and remains dormant until the spring, when it breaks into growth and the spur is cut off several inches above it.

The knife most suitable for the operation of yema budding is a narrow-bladed one, having a razor edge. A good pocket knife with a steel blade that is worn somewhat is ideal, if it is well sharpened.

FUMIGATION OF CITRUS.

FROM DECEMBER TO MARCH is the best time of the year to fumigate citrus trees with hydrocyanic acid gas to kill scale insects since the fruit is then small, and the scales which are killed are thrown off as the fruit grows (states the N.S.W. Department of Agriculture). In districts where the white wax scale is prevalent, it is, as a rule, in the early stages of development during January and February and is then readily killed, whereas later the kill is not so satisfactory. There is no evidence to show that the kill of red scale is better from December to February than in the late autumn, but if fumigation is delayed until the fruit has nearly reached its full size, it will not be clean by picking time.

The Pot or the Dry Method?

The two methods of liberating the gas under the tents, known as the "pot" and the "dry" methods, depend respectively upon the action of sulphuric acid on sodium or potassium cyanide, and the exposure of calcium cyanide dust to the air.

The dry method has several advantages over the pot system. It can be carried out during the day time in bright sunlight, the charge can be applied more conveniently and rapidly, thus enabling a greater number of trees to be handled by the same number of men, and there is no risk of the tents being damaged by accidental contact with acid.

The labor cost is approximately two-thirds that of the pot method, while the cost for material is about the same. The method has been in use for about four years in N.S.W., and on the whole has given satisfactory results, though in some seasons variable results have been obtained. The reliability of the method over a number of years and under varying seasonal conditions has as yet to be tested, and as new types of calcium cyanide dust are appearing on the market, an amount of experimental work yet remains to be done.

The Apparatus Required.

The sheets should be of strong, closely woven calico, and should be large enough to completely cover the trees and allow an overlap on the ground of 18 inches or more. Large or medium-sized trees can be more conveniently covered with sheets than with tents, though sheets are more costly than tents owing to the larger quantity of material required.

The size of sheet varies from 25 feet square for a tree 6 feet high and 6 feet in diameter, up to 50 feet

square for a tree 16 feet in diameter and height. Except where the trees are small, hoisting poles and ropes are necessary; the poles should be 1 foot longer than the height of the tallest tree, and the ropes about 3 feet longer than the poles.

For the pot method a spring balance which will weigh accurately to $\frac{1}{2}$ oz., a measuring glass marked in fluid ounces, basins or crocks about 6 to 9 inches deep and the same width, and chemically pure cyanide and sulphuric acid are required, while for the dry system measures for the dust, the dust itself, and a blower are necessary. Measures are usually supplied in the form of metal spoons holding from $\frac{1}{2}$ to 8 oz., while the ideal blower is one which will introduce the dust in a fine state of division, i.e., with every particle separated, without causing very much of the dust to rise up through the tree.

To Carry Out the Work.

The trees are first covered with the sheets, and care should be taken to see that the bottom of the sheet is in close contact with the ground; in fact, except where the overlap is fairly heavy, earth should be placed on it.

The measured quantities of gas-producing materials are placed under the tent (the acid and cyanide in a basin with the pot system, and the dose of dust blown under in a downward direction if the dry method is adopted), and the trees left for a period of forty-five minutes.

FRUIT BARROWS IN SYDNEY.

The Premier (Mr. Bavin) has issued instructions to the police that in future fruit barrowmen are not to be allowed to congregate in busy sections of Sydney, and particularly in the shopping areas.

During the fruit glut of last season, the barrowmen were treated with a deal of consideration by the police, and some of them took advantage of this leniency. In future, all unauthorised stands will be prohibited.

The Murrumbidgee (N.S.W.) orchardists will have to dispose of 700 tons of Peaches this season in the form of fresh fruit. This is the quantity left over from the quota taken by the canneries.

HIGH PRICES FOR PEACHES.

For a consignment of Peaches sent to Perth, prior to Christmas, by Mr. A. Flintoff, excellent prices were received. Three-quarter flat cases sold at 32/6 to 40/- a case.—"Blackwood Times."

Tasmania.

News and Notes.

1,000,000 Cases of Apples for Export.

DRY warm weather has been generally experienced throughout Tasmania during early January, and conditions have affected the yield of berry fruits, the harvesting period being somewhat curtailed.

Apricots are now claiming the attention of growers, and picking is in full swing. Some areas in the drier districts have not developed the crops anticipated, owing to lack of moisture, but the majority of orchards are yielding a good sample of large-sized fruits, a high percentage of which will be suitable for canning purposes.

The position in respect to the **Apple and Pear crops** has not materially altered except that the warm dry weather has assisted toward checking the development of fungus disease.

The official Apple forecast is for approximately a 47 per cent. yield, is 1,700,000 bushels. Shipping agents report that space bookings are coming in very slowly, and there is every inclination that the total shipments to overseas markets will not exceed one million cases. The Pear crop has slightly better prospects, and the yield should result in about 60 per cent. of normal, approximately 140,000 bushels.

Fruitgrowers are busily engaged in making preparations for the export season. A number of new packing sheds are in course of construction, and saw mills are speeding up deliveries of case material in order to ensure reasonable seasoning for export.

New Cold Stores.—The new cold stores that are being erected at Port Huon are now employing the maximum number of men in order to expedite construction.

The stores are both situated adjacent to the Deep Water Wharf enabling fruit to be quickly loaded into interstate or overseas vessels.

An announcement has been made by the firm of H. Jones & Co. Ltd., that arrangements have been made for a steamer to visit the port this season to lead fruit direct for overseas markets. An endeavor is being made to obtain more vessels to load cargoes and growers are hopeful that at least three to four steamers will eventuate.

Port Huon is situated right in the centre of one of the most productive Apple districts of the State and the facilities provided by cold stores and direct shipments should not only

enable growers to market their fruits more efficiently, but also result in a great saving in freights and handling. The decentralisation of the export trade from Hobart should also assist to solve the problem of congestion, which last season proved rather serious and allow for better all-round facilities in receiving and shipment.

Overseas Fruit Markets.

Of late years a keen competition has developed between the different ports of Great Britain, in respect to the trade from the Commonwealth, and most of the larger centres maintain representatives in Australia to encourage and develop this trade.

During January a visit was paid to Tasmania by Mr. H. M. Ford, Secretary of the Clyde Trust, Glasgow, with view to placing before exporters and others interested in the industry the desirability of developing a direct trade with that port. During his visit Mr. Ford was able to meet the principal exporters, and also obtain an idea of the extent of the Tasmanian Apple industry.

Department of Agriculture.

Arrangements have now been completed for the transfer of the Technical Staff of the Department of Agriculture to Launceston, where the new offices and laboratories will be situated. Under the new organisation the senior officers of the dairy, poultry, veterinary and agronomy sections will be located at the northern centre. Owing to the fruit industry being principally confined to Southern Tasmania, the Division of Horticulture will be retained at Hobart under the direction of the Chief Horticulturist, Mr. P. H. Thomas.

Seal of Quality.—The scheme which has been designed by the State Fruit Advisory Board to improve the standard and appearance of overseas Apple exports, has now been brought before fruitgrowers. The principal feature is the adoption of an attractive label in the form of a seal, in which is inset a map of Tasmania.

Fruitgrowers are invited to come into the scheme and export under this seal, the principal conditions being:—

"Careful grading and packing, and the use of a neat and attractive container."

Every endeavor will be made to ensure that consignments going forward under this label are of the highest quality, and the fruit trade will be fully informed of the objects of the scheme, and what the "seal" stands for.

Consignments will be confined to the "Special" and "Standard" grades

—a red seal designating the former and a blue seal the latter.

The label may be used under the approved conditions for consignments of Apples to either the interstate or overseas markets.

Marketing Berry Fruits.

Growers of Black Currants are in a very serious position owing to the restricted demand at the factories for processing purposes this season.

The majority of producers have entirely relied upon this avenue for the marketing of their crops, and are forced to seek some other outlet for a large portion of their yield.

An endeavor is being made to develop the markets for fresh fruits upon the mainland. This at present is somewhat limited, and as the crop is reported to be heavy, the position is very serious to those engaged in this industry.

Representations are being made to the Prime Minister by the Hon. Premier, at the Sydney Conference, for assistance to these growers to tide over this season. If such is forthcoming, it must be available immediately, otherwise a large proportion of the crop will not be harvested.

"SEAL OF QUALITY."

Export of Tasmanian Apples. Progressive Enterprise.

THE Tasmanian State Fruit Advisory Board has launched a scheme designed to assist the fruit export trade of the Island State.

A label has been designed in the form of a seal, which may be pasted on cases conforming to the conditions laid down by the Board.

Carefully graded clean fruit of correct and uniform maturity is the objective, and in the case of the "special" grade the color requirements must be complied with.

The wharf inspection of the consignments forwarded under the "Seal of Quality" will receive careful attention, and the field officers of the Horticulture Division will assist growers coming into the scheme in the selection, packing, and preparation of fruit for shipment. Consignments which do not comply with the requirements will not be allowed to be shipped under the selected brand.

Conditions of Use.

1. Consignments to be packed in Australian hardwood and Canadian pine cases.

2. Cases to be of seasoned wood, and having the ends planed or smoothed.

3. Special stencils to be cut to the measurements and pattern illustrated and the seal affixed as shown. Powdered paste for affixing labels may be obtained from local merchants.

4. The name of variety and either the size or number of Apples in case stencilled at bottom.

5. Sizes of fruit limited to 2½ in. to 2¾ in. (245-144 Apples), or 255-125 counts in the Canadian case.

6. Exporters must confine shipments under this brand to lines of not less than 15 cases of any one size and grade of any variety.

7. The following are the varieties recommended for shipment under the "Seal of Quality" brand:—Alfriston, Cleopatra, x Cox's Orange Pippin, Crofton, Delicious, Democrat (Tasma), Dunn's Seedling (Munro's Favorite), Geeveston Fanny, French Crab, Granny Smith, xx Jonathan, Scarlet Pearmain, Statesman, Tasman Pride, Worcester, Pearmain, Sturmer.

xOnly 2½ in., 2¾ in., and 2½ in. allowed.

xxSpecial 2¾ in. not allowed.

All growers wishing to send any fruit under the seal are requested to make application to Mr. P. H. Thomas, Secretary of the State Fruit Advisory Board, Department of Agriculture, Hobart.

AUSTRALIAN FRUIT EXPORT.

Apples About 2,000,000 Bushels.

Exports of fresh fruits to the United Kingdom and the Continent will be on a much reduced scale as compared with last year's record shipments.

The export of Apples will probably be about 2,000,000 bushels. Victoria and South Australia are practically out of the picture. Western Australia with a bumper crop will send 600,000 to 700,000 cases, while Tasmania's contribution is expected to exceed 1,000,000 cases. Victoria is sending some shipments of Pears, but these appear to be on a modest scale.

The quality of the fruit is excellent, and those who are fortunate enough to have crops this year should do very well indeed.

The demand on the Continent for Australian and N.Z. fruit is increasing.

Growers would do well to consider the development of the market in the United Kingdom by sending to the ports near to the large centres of population.



Tasmania's Seal of Quality Labels.—For "special" grade the label is red; for "standard" grade a blue label is used.

Western Australia.

Cultural Notes for February.

(By Geo. W. Wickens, Superintendent of Horticulture.)

This month usually sees the first shipment of Apples to England, and it is hoped that growers will refrain from shipping immature fruit. This applies particularly to Jonathans, which should not be gathered until they have attained a rich red color.

The early ripening specimens usually borne on terminal buds, are apt to develop bitter pit and Jonathan spot on the voyage to Europe, and any that open up in this condition will probably affect the sale of later consignments.

If an early picking must be effected, then Cleopatra is much safer to gather on the green side than Jonathan. Be on the safe side, however, and refrain from exporting immature Apples.

Gathering of stone fruits will still be in full swing this month, and early varieties of Apples and Pears will also claim attention. The very early Pears such as Citron des Carmes and Jargonelle, are allowed to ripen on the trees, and are fit to gather in December and January, but they are of poor quality, and not recommended for commercial orchards. The best Pears must be gathered before ripening and allowed to mellow in storage before they attain the peak condition of flavor and texture.

In a less degree this applies to Apples, but there are some good varieties of the latter fruit which are excellent for dessert purposes when freshly pulled from the trees; Gravenstein and Jonathan being two good examples.

The ease with which the stem of the fruit separates from the spur is a good guide as to the fitness of the fruit for gathering.—W.A. Journal of Agriculture.

Bridgetown Fruitgrowers' Association.

The monthly meeting of the Association was held on December 21, Rev. Davis (President), presiding over Messrs. O. Sparks, E. Abbotts, N. Bolton, J. Young, C. H. Holdsworth, W. Abbotts, H. Lake, J. Sparks, A. S. Arkle, H. M. Dallas, F. E. S. Willmott, C. H. Ozanne and Major Whittell (Hon. Secretary).

Export Inspection.—Mr. Ozanne stated that several members had waited on the Superintendent of Hor-

ticulture (Mr. Wickens), and were told that fruit for export would not be inspected at Bridgetown. He (Mr. Wickens) said that he had no guarantee that the fruit inspected would reach Fremantle within 24 hours, and on the other hand fruit may be three days on the trip.

Export Regulation.—A letter was read pointing out that new fruit export regulations provided that the country of origin must be shown clearly on each case in letters not under half an inch in height. Members pointed out that if "West Australia," as in the past, was shown on each case it would meet the regulation. All unsightly and damaged cases would be rejected.

U.S.A. and England.

W.A. Grower Relates Experiences.

The President of the Bridgetown Fruitgrowers' Association welcomed Mr. F. E. S. Willmott home again after his world tour, at the recent meeting of the Association, states the "Blackwood Times."

Mr. Willmott said he was loth to leave old England, but was glad to get back to a warmer climate. In America he had a most interesting trip, having travelled by car, train and aeroplane. He was struck by the American means of travel, and realised that Australia must have the same gauge railway throughout.

It was most interesting to see the way fruit was handled in California and he would look forward to the time when Australian growers could work on similar lines. The orchardists grew the fruit and it ended there. The manner in which fruit was sent over the railways was an eyeopener. Huge trucks, carrying ice, conveyed the fruit at 40 miles an hour over the 3,000 mile stretch to New York and the fruit landed just as it came from the trees. Motoring over one 50 mile stretch he saw nothing but walnut trees on both sides, the trees being 40 feet apart and were touching. They were all irrigated.

They knew how to handle things; nothing was too big for them to tackle. The Jonathans he saw in New York were beautifully colored, with a splendid flavor, but the same Apples from California, although just as well colored, did not have the same flavor. This applied to the fruit from irrigated areas. In London he only saw two cases of W.A. Apples, and they were from R. C.

Williams, of Bridgetown. The fruit was good, but showed marks where it had been touched by the cases. He opened scores of Tasmanian and New Zealand Apples, which were on sale everywhere. When he was at Covent Garden, Dutch Peaches were selling at 1/6 each, while Plums were selling at 6d. each. Continuing, Mr. Willmott said that Messrs. Geo. Monro Ltd. preferred labels on the cases and were very disappointed that so little fruit from W.A. was placed on the London market last season. The N.Z. fruit was very good, but he did not fall in love with the Canadian case, there being too much give in it. He was told that the wood on the W.A. cases was too stout, and the fruit packed a little too tight, while Monro's admitted that the Apples packed in wood wool arrived in better condition than those packed in cardboard. Labels "hit one in the eye," whereas stencilling was often very dull. W.A. growers could learn a great deal from growers in California and in fact, had a long way to go to reach the U.S.A. standard of growing fruit.

RED SPIDER.

Mr. Ozanne contended that more consideration should be given to the destruction of red spider, when he was speaking at the recent Bridgetown Fruitgrowers' meeting. Mr. H. Lake said that the pest could be easily handled by spraying with oil at a strength of 1-14 in the winter. Before he sprayed last winter the under part of the limbs was red with spider and to-day they were clean. Oil spray at 1 in 20 was not satisfactory, and it required the strength mentioned.

GERMAN TARIFF ON APPLES.

Mr. C. H. Ozanne said he had noticed by the press that Australian Apple growers were at a disadvantage with New Zealand growers on the German markets, the Australian growers having to pay 1/6 a case tariff more than his fellow growers from New Zealand, and he wished to know the reason of this.

Mr. Willmott: "If you hit a nation then they must hit back. The Australian tariff apparently hits Germany, and she hits back."

Following a short discussion, it was decided to write the executive of the W.A. Fruitgrowers' Association and ask them to get in touch with the Minister for Markets and Migration and seek the reason of the difference of tariffs.

British Economic Mission.

Audit of Australia's Resources.

Faithful and Comprehensive Review.

Tariff Limits Reached: Federal Arbitration Condemned: Uniform Railway Gauge Needed: Effects of Navigation Act.

Burdens on Primary Industries.

"Australia Riding on the Sheep's Back."

Australia's Position Sound, and Future Prosperity Assured.

THE BRITISH ECONOMIC MISSION has completed its survey of Australia's finances and resources, and has presented its report to the Prime Minister.

The report is a noteworthy document. With trained minds, and outstanding ability, the members of the Economic Mission travelled through Australia, north, south, east and west, with untiring zeal, studying Government finances, investigating industries, primary and secondary, interviewing labor leaders, and generally coming to grips with the major problems confronting this young country.

Withal the report is kindly and sympathetic.

We have made mistakes; some of them are bad ones—notably the break of gauge on the railways—and the establishment of a Commonwealth Court of Compulsory Conciliation and Arbitration—but none are irremediable.

Australia's position is sound, but we have some years of patient work to make up the leeway caused by economic blunders.

The members of the Economic Mission were as follow:—Sir Arthur Duckham (leader), Sir Hugo Hirst, Sir Ernest Clark, and Mr. D. O. Malcolm.

* * *

Here is a summary of the Mission's findings:—The indispensable condition of the promotion of trade between Great Britain and Australia, and of the increase of settlement in Australia is the prosperity and absorptive power of Australia itself. The present financial position is sound. Australia has spent too much on unproductive development without adequate preliminary investigation, thus mortgaging the future. A proportion of loan moneys raised overseas accrues to the Commonwealth as revenue and is spent accordingly. This is bad finance. Improvements will come through the establishment of a Loan Council, the work of the Development and Migration Commission and the Council for Scientific and Industrial Research. Banks should be consulted in advance regarding loans. The present conditions are not favorable for general migration.

The £34,000,000 agreement should be amended to provide work which will promote migration. A valuable outlet would be the unification of railway gauges. This work must inevitably be undertaken. Instead of developing fresh land, more intensive use should be made of land al-

ready occupied. Costs of production must be reduced. The combined effect of the Tariff Arbitration Acts and Navigation Act has seriously affected export industries, particularly in Western Australia, South Australia and Tasmania.

There is ground for the common complaint of a vicious circle of increased prices due to the tariff, and of increased costs of labor due to Arbitration Awards, and it is urgently necessary to break the vicious circle without lowering the standard of living, which is real wages.

The tariff limit has been reached; efficiency should be a condition for protected industries. A scientific enquiry is needed into the whole tariff question, and in the meantime, no avoidable increase of duties.

Protection when granted, should be effective. Reduction of duties may mean decrease in the amount of the British preference, but if reduction be to the economic benefit of Australia, Great Britain has more to gain from that source than from preference accorded to her.

Compulsory Arbitration Failure.

The system and settlement of industrial disputes by awards of the courts set up under the Arbitration Acts has failed, has involved overlapping jurisdiction, and conflicting decisions, and has tended to divide employer and employed into two opposing camps. There should be a minimum of judicial and governmental interference; industrial disputes should be settled by frank exchange of views between the parties concerned.

The fixing of wages according to variations in the cost of living is undesirable. The Industrial Peace Conference is fraught with possibilities of great good.

* * *

Public Debts.

The Economic Mission's report deals exhaustively with the dead weight of Australia's debts, and unproductive Government undertakings.

The Commonwealth debt on June 30, 1928, was £293,000,000 war debt, and £79,000,000 for works such as Post Office, Railways, and War Service Homes. The corresponding figures for 1922 were £333,000,000 and £32,000,000 respectively; so that in the six years the dead weight war debt was reduced by £40,000,000, and the works debt increased by £47,000,000.

The position is more serious with regard to the combined debts of the States. During the past five years the total interest charges rose from £20,807,026, to £31,373,271. There was

much unprofitable expenditure due to pressure of sectional interests.

The Murray River Project is costing much more than was anticipated. The completion of the Hume Reservoir should be suspended.

Tariff and Arbitration.

The Tariff and Arbitration Acts have laid an excessive and dangerous load on unsheltered primary industries, particularly in Western Australia, South Australia, and Tasmania; the latter State has suffered through the Navigation Act.

Manufactured articles and such commodities as sugar, cotton, dried and canned fruits, wine and butter, are either not being exported at all, or are made exportable by a subsidy.

The vicious circle of increased costs from the Tariff and Arbitration Awards, is crippling Australia's progress, and her power of supporting increased population.

Marketing and Distribution.

"A great problem facing Australia," the Mission continues, "is that of marketing the surplus when production overtakes the home demand, and a surplus is available, and when this surplus has been produced at a higher cost than in other exporting countries. So long as it is but a small percentage of the total production, the difficulty can be, and has been, met by projects for assistance from within the industry itself, or from the Government. When the surplus assumes large proportions then the problem of marketing becomes greatly intensified, and even critical, because the home consumer may be unwilling to bear the cost imposed on him to assist the overseas market.

The surplus of production has been intensified by far-reaching development schemes which have been embarked upon without due consideration of the question of how the resulting increase in production can be marketed.

Improved and scientific methods of production, although they will reduce costs, will at the same time permit of a bigger output being produced on the same areas. Nevertheless the first step is to reduce the cost of production. This need is common to all industries in Australia.

Australia must look for her development in a great measure to remunerative exports. High costs of production limit remunerative export mainly to wool and wheat. The home market has been artificially retained for agricultural products, and there is difficulty in marketing a surplus, and this difficulty is intensified as the sur-

plus grows. Co-operative handling of products retains all the profits for the co-operators, but is not always efficient.

Great Britain being the best market for Australian products, the best possible selling organization should be set up there. Other nearer markets should be exploited, but a real export business depends on the cost of production being brought down.

Reciprocal Trade.—Reciprocal trade between Australia and Great Britain, should be fostered by all means. The respective fiscal systems of the two countries cause difficulty in the matter of reciprocal trade preferences, but suggestions are made in the report for overcoming them.

Co-operation and Private Enterprise—Government Control.

"As the producer is usually in a small way of business, it is necessary for him to join with his neighbors for the co-operative selling of his product. We investigated a number of co-operative enterprises; many are not operated to full efficiency. . . . Private enterprise is apt to be more successful than co-operative enterprise in handling agricultural produce. . . .

"Great Britain is probably Australia's best market. High quality goods and continuity of supply are essential. The best selling organization, employing the highest grade of salesmen, should be set up in Great Britain, **Preferably outside all Government control.**

"There are markets nearer Australia which should be developed. Costs of production and delivery must be brought down to world prices. . ."

Sugar and Butter.

In an "unofficial" report published in the Melbourne Herald, Sir Arthur Duckham stated:—

"It is not my wish to continue to preach to Australia, but there are some matters upon which I hold strong views. There is too much overlapping and division of effort in production. Costs must be cut, and the best way to do it is to reduce overhead. In Queensland I found there were too many sugar mills. Ten could do the job of 30, and do it with less expense.

"Then, again, there are too many butter factories carrying on with methods which, while not altogether obsolete, are certainly behind the times. I contend that in production, especially to those commodities with which Australia must compete on the world's market, the outstanding need is to improve output and at the same time reduce costs."

GREEN MANURE CROPS.

A Seasonable Reminder.

Continued clean cultivation, such as is necessary in the orchard, has the effect of seriously depleting the organic content of the soil. Where it is intended to sow green manure crops

as a means of improving its mechanical condition and fertility, preparation should be made early this month. Often it is necessary to plough before sowing. Either field peas or tick beans are suitable leguminous crops for this purpose. They should be sown with about 1 cwt. superphosphate per acre, or a mixture of $\frac{1}{2}$ cwt. super-

phosphate and $\frac{1}{2}$ cwt. blood and bone.

The practice of green manuring should be limited to districts where the normal rainfall is more than sufficient for the trees or where irrigation can be practised. In other cases green manure crops will rob the trees of too much moisture, except in abnormally wet seasons.

Dried and Canned Fruits.

WORK OF EXPORT CONTROL BOARD.

Interesting Review.

An interesting address was delivered by Mr. A. F. Bell, one of the Government representatives on the Export Control Board, at the Federal Conference of the Australian Dried Fruits Association.

Mr. Bell said the Board had devoted a large proportion of its revenue to publicity abroad. The Commonwealth Government had subsidised the producers' contributions to a maximum of £50,000 per annum, and the Dried Fruits Board had, from its revenue contributed £3,500 in 1926, £20,000 in 1927, and £25,000 in 1928. During the current year it was contributing £1,500 per month as a minimum contribution for publicity.

This scheme was entirely apart from, but collateral to, the Empire Marketing Board's activities. At no time had the Dried Fruits industry had such publicity as during the past two or three years.

With regard to trade in the East, Mr. Bell said that inferior dried fruits were offered for sale, and the prospects for good Australian fruit were not bright. The market for good fruit was limited. The undoubted outlets for Australian dried fruits were in the United Kingdom, Canada, and New Zealand. Every effort had been made to improve the N.Z. market by the co-operation of commercial interests. However, until some preference was granted to N.Z., Australia must do the best it could for the present.

Excellent work had been done in Canada by Mr. R. A. Haynes, special representative, in 1927, with the result that Canada was our best customer for Currants. A broad policy must be adopted if Australia is to hold a market which took 3,000 to 3,500 tons of Currants annually.

The English Market.

In 1927-28, Great Britain imported nearly 30,000 tons from U.S.A., 8,500 tons of Raisins from Spain, and a considerable quantity from Turkey and Mediterranean centres.

Which fruit was going to be displaced? As far as could be gauged, the Greek interests had raised their prices for Currants with some benefits to Australian fruit interests. Apparently Greece was rationing supplies to Great Britain, and keeping

prices at much firmer levels than in earlier years. The Greeks were doing exceptionally well, but the real menace was the enormous quantity of cheap American fruit, which might affect the Currant market and incidentally bring down values in Great Britain.

AUSTRALIAN CANNED FRUITS.

The Secretary of the Australian Fruit Cannery Association, Mr. Jas. L. Moore, supplies the following information:—

Sales in Great Britain from the Commencement of the Season to the 29th December, 1928.

	Cases.
Apricots	43,600
Peaches (halves)	180,838
Peaches (sliced)	57,980
Pears	81,598
Total	364,016

Further advice shows that the sales in Great Britain for the fortnight ending January 12, 1929, were:—

	Cases.
Apricots (Standards)	1,667
" (Standard 16 oz.)	300
" (Choice)	10,217
Peaches (Halves)	6,110
" (Halves, 16 oz.)	400
" (Sliced)	355
Pears	760
" (16 oz.)	800
Total	20,609

This makes the total sales to January 12, 1929:—

	Cases.
Apricots	55,784
Peaches (Halves)	187,348
Peaches (Sliced)	58,335
Pears	83,158
Total	384,625

TIN PRINTERS' AND TIN BOX MAKERS' "AUTOMATIC" DRYING OVENS.

The great increase in the canning and packing industries has caused new factories to spring up in all parts, and small factories to re-organise on modern lines.

The British-made "Automatic" oven has been adapted by the largest of the American makers of this type of oven for their overseas trade for

the reason that its robust and mechanical design makes it more suitable for export than their own product of lighter construction.

Modern high-speed rotary presses necessitate the use of the "Automatic" drying oven, for they deliver the printed sheets quicker than these can be handled. To obtain full output from the varnishing or lacquering machine twice the number of hands are required for the old system of racking, which for the necessary racks and "box" ovens occupy about three times the floor space.

The design has been worked out on "sectional" lines, so that the oven may be shipped without difficulty and erected without previous experience. The heating can be effected by gas, electricity, or oil furnace.

Outside of Great Britain, where it is the standard oven, the automatic oven has already been supplied to New Zealand and Germany.

Further details are obtainable from H.M. Trade Commissioner, Henty House, Little Collins-street, Melbourne.

FRUMMERTY.

An Old English Thanksgiving Dish.

A Delightful Way of Using Raisins and Currants.

Two cups clean wheat, 1 cup Sultanas or Raisins, 1 cup Currants (all well washed), 4 pints water, 2 pints milk, salt to taste.

Method.—Put wheat into cold water, bring to boil, and allow to simmer at least four hours. Put Currants and Sultanas into milk, and bring to boil. Pour into wheat, and thicken all with flour. Sweeten with honey. Serve cold with nutmeg (grated), and if honey is omitted, use sugar if desired.

THE WINE INDUSTRY.

Mr. Paterson, Minister for Markets, told the conference of representatives of the wine industry that there was no possibility of the Federal Government agreeing to the restoration of the original bounty.

At the conclusion of the conference, Mr. Paterson said that there was a sincere desire on the part of all sections of the industry to co-ordinate export marketing.

Schemes were submitted by many delegates from an export organisation, and the conference agreed that the Markets Department should draft the necessary Bill designed to give the industry powers, and provide for a poll to be taken before the Act came into operation.

South Australia.

Seasonal Fruit Crop for 1929.

(By Geo. Quinn, Chief Horticultural Instructor.)

THE APPLE CROP will be very light this year. Horticultural Instructors in the various districts now estimating its volume as ranging from 20 per cent. in the principal Apple-growing districts to about 33 per cent. in the South-East, where the area under this fruit is very limited. The codlin moth attack is severe, but other pests and diseases are not much in evidence.

As practically no good soaking rain has fallen during the past ten

weather is seriously affecting the fruit, and the Prunes are small, and freely dropping in a premature condition in some districts.

The Cherry harvest is over, and the good yield and payable prices have been the one bright spot in our orchard work thus far.

Peaches and Nectarines are very variable and the average yield, though below normal in quantity, is not selling at remunerative prices.

The berry fruits are practically over, as the continued dry weather towards the end of the year finished them hurriedly in most places.

Almonds are promising for a good average crop. Quinces promise a good yield, as do Figs also.

Glasshouse Tomatoes are nearly the end, and outdoor crops are slow

Currants, and Gordos, is well maintained, and the growers' powers of financing the harvesting will be heavily taxed.

The Doradillo vines have not an average crop showing, but the restricted yield may prove more satisfactory under the circumstances at present surrounding the wine and spirit industry than if a greater harvest were in view.

SOUTH AUSTRALIA.

Southern Grape Growers' Association.

Sixty Grape growers who attended a meeting held at McLaren, South Australia, at the end of December, decided to form an Association of growers to be called "Southern Grape Growers' Association."

The meeting was very enthusiastic, and much good is expected from the new organisation, particularly with regard to the sale of their fruit, chiefly wine Grapes.

Mr. F. R. Bruce was elected President; Mr. C. Wakefield, Vice-President; and Mr. A. H. Fraser, Secretary. The new Association is now in touch with the growers of Clare, Tanunda, and Marion, who have formed strong associations for the protection of their interests.

APPLES IN ENGLAND.

Retailers Must Mark Country of Origin.

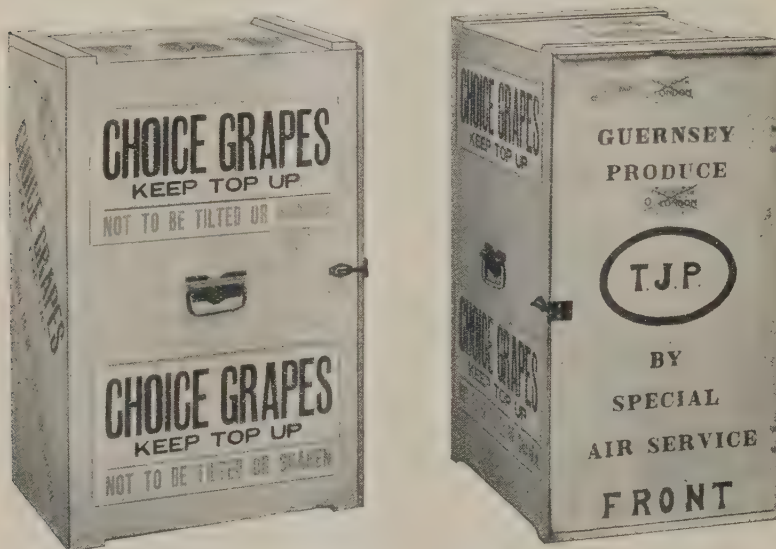
Empire grown fruit will receive publicity in the fruit shops of Great Britain by the new regulation which provides that from November 13, 1928, all Apples imported into England, exposed for sale, must be ticketed with their source of origin.

The lettering on the tickets must not be less than half an inch in height.

It is not necessary for home-grown Apples to be marked and Apples produced with the Empire may be marked with a ticket bearing the words "Empire" or "Empire Grown."

Apples grown outside the Empire may be marked with the word "Imported," or alternatively the country of origin may be stated.

Although the regulation does not require the marking of home-grown Apples, there is a feeling among sellers that the labelling of them as "Home Grown" or "British" will be advantageous.



FRUIT BY AEROPLANE.—Guernsey Grapes were delivered by aeroplane in perfect condition to Messrs. T. J. Poupart Ltd., Covent Garden, London, in a few hours after leaving the island, thus creating a record in transit, as the journey usually takes over 24 hours.

weeks, the quality of the fruit is still in doubt. Although a few growers may pack limited quantities for export, the present outlook does not warrant sending any Apples overseas, as the local requirements should cover our production this year.

The Pear crop is not fulfilling its earlier promise, and with the exception of the W.B.C. (called Duchess here) not more than half a normal yield will be harvested.

Apricots are abundant, but owing to the lack of rain, the average sample is below canning size, and the greatest proportion of the crop is being dried.

Plums and Prunes are from fair to heavy. In numbers quite 100 per cent. of a normal yield, but the dry

to mature, hence prices have been firm recently.

The citrus crop is much lessened by the "summer drop" of the young fruits which occurred after the hot spells in December. There should, however, be a fair crop in most districts of both Lemons and Oranges.

The Grape crops in the coastal areas are hanging in the balance as a soaking rain before the middle of January would still fill up the berries and make for good crops of wine Grapes and Zante Currants. Without such moisture, the vintage must shrink to about two-thirds of what the present crop indicates as a possible yield.

In the irrigated areas, the promise for heavy yields of Sultanas, Zante

Editorial Chats



THE report of the Economic Mission, a summary of which is given in this issue, is of the greatest importance to Australia. Four outstanding business men of Great Britain have not just "looked us over," but inspected our finances and resources, and thoroughly investigated the present stage of development of this island continent.

Some criticisms are quite frank, and for these chapter and verse are given, but the gracious wording tempers the criticism into constructive suggestions for the future.

Speaking in large terms, Australia's finances are sound; weaknesses in administration are pointed out, also suggestions for future transactions. Labor and capital must co-operate more closely. Much depends on the success of the Peace in Industry Conference. The necessity for developing our export trade in primary products on economic lines is stressed. At present, wool and wheat are our major exports: Australia is represented as "riding on the sheep's back."

With reference to the fruit industry, the Mission recognises the development of planting under Government auspices, without adequate provision for marketing.

For the problems thus created, all interested are earnestly seeking the way out.

"Fruit World's" Policy Endorsed.

Readers will remember that for years past we have consistently pointed out some of the major facts dealt with by the Economic Mission—the burden of rising costs by the tariff and Federal Arbitration Courts' awards, the effect of the Navigation Act, the losses caused by the break of gauge, the necessity for the development of the export trade on economic lines under reduced production costs, the need for research to produce better yields economically from the developed areas, preferential trade agreements with Great Britain, the unwisdom of undue Governmental interference with commerce and industry.

* * *

In his public utterances amplifying the report, the leader of the

Economic Mission, Sir Arthur Duckham, takes quite an optimistic view of this country's ultimate prosperity. By attending progressively to the matters affecting our welfare, our problems will be straightened out; but we must be patient. In some important matters, we have to retrace our steps. Such troubles as we are suffering from "are not deep-seated, and will yield readily to treatment."

Australia is grateful to these talented men for their valued service to the Commonwealth.

SHOWS TO COME.

Victoria.

Diamond Creek, March 9.
Bunyip, March 13.
Somerville, March 13.
Lilydale, March 20.
Red Hill, March 20.
Yarra Glen, March 20.
Bacchus Marsh, March 23.
Croydon, March 22, 23.
Garden Week, Melbourne, April 9-13.

New South Wales.

Batlow, March 26-27.

Acknowledgment. — We acknowledge with pleasure the receipt of a cheery card of seasonal greeting from the "Better Fruit Magazine," Portland, Oregon, U.S.A.

SERVICES APPRECIATED.

It was a pleasure while in Hull to renew the acquaintance of Mr. J. Fred. Kruger, of the White Service, who is well known and appreciated in Australia, New Zealand and South Africa.

My visit to Hull was made pleasant by Mr. Kruger and his co-workers. Every facility was provided for viewing the various aspects of the fruit importation and distribution in Hull. I would like in this manner to express appreciation.—R. E. Boardman, Editor, "Fruit World."

TRY MINE.

(An advocate for eating Apples instead of smoking has declared that no cigar ever kept a doctor away.)

It's lately been asserted by

A proper Apple fan

That though cigars can't keep away
The doctor, Apples can.

Now, though I think with him that health

By eating fruit is gained,

I feel his statement re cigars

Is somewhat overstrained.

But there, perhaps he's one of those
Whom others lucky call,

And so the doom of some of us

May never him befall.

For if he'd ever smelt cigars

Like those my old Aunt Jane

At Christmas always sends me, he

Would sing another strain.

They smell like nothing else on earth

That you have ever smelt,

And make you feel that Fate to you

A cruel blow has dealt.

Why—talk about a doctor—they,

Without the slightest doubt,

Would put, if you could smoke one
through,

An army soon to rout.

—Toby—in "Nurseryman and Seedsman," England.

Queensland is divided on the Banana control question. A ballot will be taken and our Queensland correspondent predicts a "No" vote.

Much land in South Queensland, planted with Bananas, is said to be unsuitable for this crop.

FIRE AT ARDMONA.

Messrs. Pullars' Packing Shed
Destroyed.

A serious fire broke out on Messrs. P. Pullar & Nephew's orchard at Ardmona on January 13. A large packing shed, containing 25,000 case lids, 10,000 cases, and 100 bales of straw, was destroyed. Fortunately, a lorry and motor spray pump were saved. The fruit-drying factory near by narrowly escaped destruction. The loss is about £600, together with the inconvenience of having to obtain cases from Tatura.

Mr. Frank T. Pullar at Ardmona is in receipt of sympathetic letters from a wide circle of friends.

The Fruitgrowers' Forum

Open Discussion on Public Questions

Correspondence Invited. The Editor Takes No Responsibility for Views Expressed

"CANADIAN" STANDARD CASE ADVOCATED.

(To the Editor, "The Fruit World.")

Sir.—Several members of our Association were interested in a paragraph which appeared on page 484 of the December number of the "Fruit World," containing some criticism from London of the Canadian standard and softwood case.

As our Association has decided to use this case for export in the future, enquiries were made in New Zealand, and a definite reply has been received, disagreeing with the statements made.

Referring to the Canadian standard case, which, as you know, is the only case used for export by New Zealand, our correspondent definitely states that it has given satisfaction. This case was adopted after having its qualities carefully tested for several seasons, and New Zealand shippers have received no complaints from any of their overseas receivers.—

Yours sincerely,

FRED THOMAS, Sec.,

Gippsland Fruit Marketing Associations,

Bunyip, 15/1/29.

SPRAYING EXPERIMENTS.

Combined Sprays: The Use of Spreaders.

Suggestions for Controlled Experiments by the Horticultural Division.

IN the October "Fruit World" there was a letter from Mr. W. J. Williamson, in which he stated the method he had adopted in using a combined spray of Bordeaux mixture and red oil, and he concluded by saying: "Perhaps someone with more experience may point out any objections."

I thought of writing, but thinking orchardists of greater experience than myself would reply, I did not do so; as such exchanging of experiences may be very valuable, however, and apparently there has been no other reply, I am glad to put down any notes I can.

The combining of sprays is without doubt a matter that requires caution, as some growers have discovered after combining lime sulphur and lead.

Nevertheless, where it is possible safely to combine sprays, it would be of great advantage to be able to use them, and thus economise in both labor and expense.

An orchardist in the Hastings (Victoria), district, wrote to "The Fruit World" some time back, and stated that he had successfully added the emulsified spraying oil to the spraying vat of Bordeaux mixture.

This season, as an experiment, I sprayed some rows of Jonathan with a proprietary brand of copper soda and oil, and some with lime sulphur.

I understand that a warm day in spring is one of the best times for spraying with oil, and certainly the trees so sprayed look very healthy, and the trees are much freer from woolly aphis than those sprayed with lime sulphur, and it seems probable that the oil is more efficacious at this time; oil applied in mid-winter to make Rome Beauty trees bloom early seems to give poor results for checking woolly aphis.

The mixture evidently requires care, however, while the Jonathan Apples only have a slight russetting, the Rokewood grafts (placed in these trees for cross fertilising purposes) are in some cases badly russeted; this might be due possibly to the Rokewood grafts having been drenched with the spray (on account of Rokewood being more subject to black spot than Jonathan) or possibly the bloom being at a different stage of development.

I have used, with excellent effect against woolly aphis, a combined spray of tobacco extract (I used black leaf 40) and red oil.

This is recommended by the Horticultural Division of the Department of Agriculture, though I do not know whether it was first tried by them.

The making of experiments in spraying seems to be a matter in which the Department could be of very great assistance to orchardists, whether carried out in a special experimental orchard, provided by the Government, or not.

Some years back the results of some tests with spraying with lime sulphur were published, but two separate sprayings were given, and unless two sprayings are essential, the extra cost of the second application would reduce the net profit, which is a point which has to be considered in commercial fruit-growing.

Apparently from references in a weekly contemporary, experiments as to arsenate of lead spraying are being carried out, and though the scientific mind naturally likes to wait and see, interim reports would be of great interest, even although final results cannot yet be stated.

Any data as to number of sprays of arsenate of lead, which gives best results from a commercial point of view (i.e., up to the point where the additional amount received for the fruit, etc., exceeds the expense of the extra spray), and also the best approximate dates for spraying would be very useful.

Also as to the use of spreaders, whether they do give a more uniform coating of lead over the Apples; and whether the addition of a specially prepared spraying oil does assist in this direction, and also in smothering eggs or young grubs.

Illustrations have been published, as an advertisement of an arsenate of lead mixture, showing an apparently uniformly spread film, without the addition of a separate spreader. This is a point which could, I imagine, be tested by a scientist in the Division of Horticulture.

Another point which might also be tested perhaps, is the extent to which rain washes off arsenate of lead, and if this occurs to a serious extent, what steps can be taken to lessen it; from difficulty realised in trying to remove spray marks (on Apples for export) where skim-milk has been added to the arsenate of lead, one imagines that that may help in that direction.

Yours, etc.,

Percival Floyd.

Tyabb, Vic.

Alternate Years' Cropping.

Continuing, Mr. Floyd writes:—At the present time the Apple-grower is in a serious position, because he has had alternate years:—

(1) When the crops have been light, in the avoiding of which scientific research might help us, and the growers, through lack of organisation and "undercutting" of prices, have failed to make it a payable proposition.

The situation calls for active measures on the part of both the Government and the growers.

Citrus Growers and the V.C.C.A.

The Editor, "Fruit World."

Sir,—In the January issue of your valuable paper, Mr. Cook, the manager of the Victorian Central Citrus Assn. Proprietary Ltd., has taken up a lot of space in endeavouring to show why the marketing methods of the V.C.C.A. should not be altered to suit the majority of growers.

Growers, generally, realise that the limitation of agents has been brought up at every conference of the V.C.C.A. Proprietary Ltd., but no effort has been made to ascertain the views of growers who are not in the present growers' organisation. Unless these growers are worked in, the present system of co-operation will die a natural death within a very short time.

With regard to dealers operating in the market, I am fully aware that this element has been in the trade ever since its existence. The more fruit sold through a limited number of agents is only making more fruit for the dealers. The accredited agents become dealers to dispose of their surplus supplies, which they cannot otherwise dispose of satisfactorily. Mr. Cook has not told me yet whether the accredited agents, in their agreement with the V.C.C.A., are allowed to dispose of growers' fruit to dealers in lines or otherwise.

Re the formation of the co-operative packing house in Murrabit. As the Chairman of the V.C.C.A. was, until recently, Chairman of the Murrabit Packing Company, I would suggest to Mr. Cook to endeavour to obtain a copy of the minutes of the meeting which was held for the purpose of forming this company. He will then see that my statement is correct re the number of growers in the V.C.C.A. in the Murrabit district.

I still say that the outside agents are handling the bulk of the citrus arriving on the Melbourne market. To substantiate this statement, I can produce the actual figures and the names of the individual agents to whom the citrus was consigned. Seeing that Mr. Cook is in touch with the Railways Department, surely he can obtain this information for himself and know exactly where he stands.

To prove that the V.C.C.A. have no control over prices on the Melbourne market, it is hardly necessary to go back six years for a case. I will therefore go back to the past few weeks. One Murrabit grower split a consignment of Lemons between two accredited agents, and one of them returned him 8/- and 9/- per case, and the other 4/- and 5/- per case. Another instance was that of four

consignments of Lemons leaving Murrabit on the one train for four different accredited agents. Number one placed the Lemons in cool store; number two returned 2/6 and 3/- per case (this grower received a debit note); number three returned 4/- and 5/-, and number four 6/-, 7/-, 8/-, and 9/-. The account sales in every instance were franked by the V.C.C.A. representatives. It would be interesting to know if this is a fair sample of efficient market control.

The two main points that the growers have for some considerable time been trying to find out from the V.C.C.A. are:—"How does Mr. Cook propose to get in all those growers who are at present outside the organisation?" Until such time as this takes place, there will be no control of citrus on the Melbourne market. The second point is:—"Mr. Cook has not yet explained why the average prices from the outside agents are better than those returned by his accredited agents."

Mr. Cook is a great believer in compulsion. Co-operation and compulsion will not blend. Efficient management and organisation are the first essentials towards obtaining the confidence and loyal co-operation of the citrus growers of Victoria.

Is compulsion the policy of the V.C.C.A. shareholders, or is it only Mr. Cook's idea of making sure of sufficient levies to keep the company in existence?

With regard to V.C.C.A. "gradually withdrawing from other marketing schemes," why did the members of V.C.C.A. have to pay Mr. Cook's expenses to South Australia (accompanied by representatives of two accredited agents), asking the South Australian hothouse Tomato-growers to market through the V.C.C.A. channels? If Mr. Cook's statement is correct, why did the Barham and Koondrook Tomato-growers unanimously reject a motion for affiliation with the V.C.C.A. for the present season?

Mr. Cook cannot name one instance where the limitation of sources of disposal has been a success where a perishable product is concerned.

Lemon-growers during the past couple of months have been receiving unpayable prices owing to over-supplies, according to V.C.C.A. reports. Yet one accredited agent is importing Lemons from Italy. Now, Mr. V.C.C.A. Chairman, are you, as a Lemon-grower, in favor of this?

Yours, etc.,

W. H. Jackson.

Murrabit, 19/1/29.

Mr. Taylor's Reply.

The Editor, "Fruit World."

Sir,—In your January issue, the manager of the V.C.C.A. replies to charges made by me against this proprietary company.

He uses the statements which I made at the meeting here in his attempt to refute my case; but in his letter he has overlooked what I made the charges on, which are as follows:—

On receipt of the letters from the V.C.C.A. stating my fruit was wasteful, I wrote to the Secretary, asking him to take a sworn declaration from the market representative and the agent that the fruit was wasteful. This he failed to do. As this is all I appealed to the V.C.C.A. to do in connection with the case, it can be seen that my statement is not amazing.

The Secretary also does not state that the sample of fruit sent him was from the carry-over from the packs sent to the agents. From his own statement, it will be noticed this sample kept for over a month, yet he tries to show that the fruit sent to the agent did not keep a week.

In Mr. Cook's last paragraph he mentions misrepresentation; does he mean that it is to be read this way? For a per case levy this company is supposed to look after the growers' interests on the market. As the declaration I asked for was not taken for me, then the company should not be entitled to the levy.

Yours, etc.,

S. G. Taylor.

Gonn Crossing, 22/1/29.

RAILWAY FREIGHT ON FRUIT.

Lower Charges Desired.

Letters are to hand to the editor from growers, directing attention to the desirability of freight reduction on fresh fruit. This subject has been dealt with at growers' meetings and conferences.

It is pointed out that cheaper freights would help the growers, many of whom—especially in the Goulburn Valley—are suffering because of over-planting under Government auspices. Fresh fruit going from Mooropna to Melbourne pays 16/- a ton, whilst canned fruit from Shepparton to Melbourne—a slightly longer mileage—is carried at 12/3 per ton. For the fruit industry there is considerable two ways freight, in the way of empty cases, manures, implements and food supplies for the large number of hands employed in the industry.

Citrus News and Notes

Items of Interest

CITRUS GROWERS' PROBLEMS.

THE annual Conference of the Victorian Citrus Growers will be held at Melbourne, commencing May 7.

It is to be hoped that at this forthcoming Conference a solution will be found for the problems recently ventilated by growers.

It is satisfactory to note that there is no dispute as to the necessity for organisation. On this basic principle it should be possible to settle matters of detail, so that there shall be continuous and pleasing growth of the growers' organisation.

When it is remembered that it has taken over thirty years to build the California Fruitgrowers' Exchange—the model of successful growers' co-operation—Australian citrus growers may well take courage and adapt their programme to meet problems as they arise, confident that if the foundations are well and truly laid, the superstructure can be steadily built thereon.

Success is not attained in a single bound. In individual and community life we learn by experience.

The primary producer is among the last to recognise the necessity for effective organisation. By training and by habit he is a sturdy individualist. But the time has fully come for fruitgrowers to organise in their several convenient groups. The suggestions made by the Economic Mission ("The Big Four"), quoted elsewhere in this issue, are very helpful in this connection.

All well-wishers of Australian citrus growers will follow with sympathetic interest the doings at the forthcoming Conference. Facts can be faced frankly, with open-mindedness, and in the right spirit. If criticisms are constructive they will do good. From the collective wisdom of earnest and capable men engaged in a common calling, it should be possible to evolve a working programme of benefit to the individuals concerned and the industry at large.

INTERSTATE CITRUS GROWERS' CONFERENCE. Melbourne, May 7.

The annual Interstate Conference of Citrus Growers, convened by the V.C.C.A., will be held at Melbourne, commencing May 7 next. Public men are being invited to address the Conference, including Hon. T. Paterson (Minister for Markets), Hon. J. Pennington, M.L.A. (Victorian Minister for Agriculture), and Mr. Harold Clapp (Chairman, Railway Commissioners).

District Associations are asked to send their proposals for the Conference agenda to V.C.C.A. headquarters as soon as possible, so that they can be circulated to other districts for an expression of opinion.

Oranges for export from S. Africa are all pre-cooled before being placed aboard ship.

Pre-cooling is also a condition laid down for the export of Pears from Victoria.

Gonn Crossing.

Mr. S. G. Taylor writes (19/1/29).—Am busy at the present time fumigating, and hope to get a good clean up of red scale; we are using calcium cyanide at present, but will change over to citrofume in a day or two. This German "Zyklon" is good stuff. Am working 30 sheets in a flight."

MANURING CITRUS TREES.

A bulletin issued by the Department of Agriculture gives seasonable hints on manuring of citrus trees that are showing evidence of an impoverished condition.

Now, states the bulletin, is an opportune time to manure trees showing signs of weakness.

Undoubtedly, stable manure is the best means of improving such a condition, but it is not obtainable in sufficient quantities. Chemical fertilisers alone will not, as a rule, give the best results, though they are very helpful if used in conjunction with organic material. Any old litter, such as decaying hay, straw, or bush scrapings will assist in improvement. A dray load per tree of surface soil from unused paddocks is excellent, and if applied about every second or third year should keep the trees in a thriving state. The soil or organic material applied should be supplemented with other fertilisers, such as blood and bone, superphosphate and sulphate of ammonia, and in some cases sulphate of potash will be of benefit.

Applications of fertilisers may usually be safely made of 1 lb. for each year of the tree's age; thus, a 12-year-old is likely to require 12 lb. of fertiliser. Every orchard must be dealt with individually on this question, however. Applications of certain amounts or the kind of manure needed cannot be stated definitely, except in a general way. As a rule if

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trees are lacking vigor and a healthy, dark-green color, apply nitrogenous manures, such a sulphate of ammonia, dried blood, or nitrate of soda. If the color of the trees is good and they have sufficient vigor, superphosphate should be applied. If the fruit is inclined to run small, applications of sulphate of potash appear to be the best, using about 1 to 3 lb. per tree.

The soiling or application of litter may be made at all times when convenient to cart, but the more stimulating fertilisers are best applied just before or at the time of commencement of spring and autumn growth.

PALESTINE LEMONS.

Palestine now raises scarcely enough Lemons for local consumption, while before the World War that country harvested approximately 100,000 boxes of Lemons, which were exported chiefly to Russia. This market was discontinued at the outbreak of the war and Palestine was left without a market for her Lemons, as they were unable to sell them to other countries because Italy could offer her fruit cheaper on account of the low exchange rate of the lire. Consequently almost all of the Lemon orchards were dug out. However, during the past two years, demand in foreign marts for the Palestine Lemon has gradually increased until now there has arisen a decided demand. Those who kept their Lemon groves have made larger profits from them than from their Oranges.

—"Citrus Leaves."

HUGE ORANGE GROVE.

Practically all the Oranges grown at Pietersburg, South Africa, are grown on one estate containing 6,000 acres of 500,000 trees, ranging from two to eight years old. Navels and Valencias are planted in equal proportions. Present production (500,000 boxes) will eventually be increased by 1,000,000 boxes, when the young trees come into bearing.

Lightning Fruit Graders.—The Lightning Fruit Grader Co., of 5 Hoddle-street, Collingwood, N.9, Melbourne, have prepared a handsome illustrated catalogue showing the various types and sizes of their graders which have obtained an excellent reputation, not only in Australia and New Zealand, but in South Africa and other parts of the world. Users of the "Lightning" fruit graders state that this class of machinery has paid its cost several times over in one season.

CONTROL OF CITRUS PESTS.

**Fumigation—Biological Control—
Spraying with Mineral Oils.**

TO ACHIEVE SUCCESS in citrus-growing, a knowledge of type of soil and location that will permit of satisfactory drainage, as well as productivity of the class of fruit tree to be grown, are essential before the grove is planted.

Citrus trees demand a rich, free soil, with that type of sub-strata which can be easily drained, more especially in arid areas, where irrigation is depended upon.

All commercial citrus-growers definitely know that to obtain the maximum reward for their efforts they

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must produce fruit of the highest quality and appearance.

One of the principal troubles with which citrus-growers have to contend is the ravage by insect pests and scale, aphids, bryobia, etc.

The exact amount of damage effected by pests cannot be estimated, but in all countries it takes a far

too large amount of what should have been profit.

Investigators in America fix it in millions of dollars in counties only. The aggregate for the United States is appalling. Even so in Australia.

The difficulties of scale control are intensified by three factors:—

1. (a) The number of different types of scale infesting the trees, and
- (b) The fact that the various young are not released simultaneously.
2. (a) Many types of the adult female scale are armored.
- (b) A lethal dosage at this stage with a specific might damage fruit or foliage.
3. (a) When acclimatised, the scale spreads to many varieties of native flora.
- (b) Where they thrive and reproduce as well as on the fruit trees.

Hence, a grove can be thoroughly cleaned up by a specific, and then under favorable seasonal conditions, reinfestation may immediately recur by the scale being blown by the wind, carried by birds, etc., from the adjacent flora.

Investigators are practically unanimous that for control the attack should be made on the evidence of the first release of young scale. The female scale dies immediately this is effected, and the young scale, before its armour has developed, is easily destroyed.

A study of the control methods adopted in the United States, which is the largest citrus-producing country in the world, involves the consideration of three distinct branches of science:—

1. Fumigation (cyanide).
2. Biological control (parasites).
3. Spraying (mineral oil emulsions).

Fumigation.

In America for many years the standard control for scale insects infesting citrus trees was fumigation, starting with the pot system (cyanide of potassium and acid). After considerable experimental work, they developed the hot gas (anhydrous cyanic acid gas). Then various types of dusts were developed (calcium cyanide), which was blown under the tents.

The fight against the pest with fumigation was not an easy one, though for a number of years they got reasonable control. During the last few years, however, it has been found that in many districts a dosage which was considered effective previously will not now destroy the scale. Hence, they speak of a resistant scale—one which cannot be destroyed by the fumigation process.

Readers of American horticultural articles will appreciate the fact that the investigators are seeking assistance from other methods for scale control.

Mr. H. H. Hilcomb, Deputy Horticultural Commissioner, Los Angeles County, in a paper read to citrus-growers at Covina in July last, states:—"There are quite a number of groves upon which red scale has

site is probably of the greatest value in the world. It does excellent work, and destroys millions of insects wherever released.

It is too early to state yet the results of the cryptolaemous, but investigators are advising growers to continue with their control programme for other pests, and where they find that the parasite has been destroyed with its host, to obtain a further supply and release them after the control treatment.

The difficulty with biological control is due to the fact that scale, aphids, etc., given favorable conditions, multiply at a much greater rate than the parasite. Hence, a balance is not easily obtained in favor of the parasite.

Dr. Atwood, of Albany, U.S.A., expresses himself as follows:—"I have watched the fruit industry grow in the United States for 60 years, but feel that the spray gun will have to control invading insects."

Oil Sprays.

During the last few years the use of mineral oils for the control of insects infesting the citrus trees has received a great amount of attention from horticultural scientists in America, and very valuable data has been made available.

Dr. Ralph H. Smith, of Riverside, Cal., U.S.A., in an article in the "Citrograph," states "that in America the earlier use was of oil in sprays . . . and until the last few years, the oils employed were nearly all of the class commonly referred to as distillates."

One of the most important contributions of which there is record resulted from experiments made by Messrs. George P. Ray and E. R. Deong, who at the time were members of the faculty of the University of California. They assembled many different samples of oils, and made tests of each to determine the density, flash point, capillarity, viscosity and percentage of unsaturated hydro-carbons.

As a result of this work, the fact has been demonstrated that a refined oil is necessary, crudes, residuals and distillates being unsuitable.

The result of this work has been to completely reverse the attitude adopted by American horticulturists to mineral oil sprays. The vogue among them now is to recommend the use of refined oil sprays as an adjunct to fumigation.

A summary of most of the American standard horticultural articles is that owing to the development of resistant scale and the fact that the infestations of aphids and red spider is on the increase, a properly selected mineral oil spray is more effective on various types of scale than fumigation, and

it is necessary to include mineral oil sprays in their control programme.

The work conducted by the above gentlemen should be of great service to the citrus-grower.

In Australia we have by a similar process eliminated many grades of oils as unsuitable for spraying purposes, and, appreciating the value of the American investigators' work, a highly refined white base oil in line with their recommendation has been selected, and very extensive tests have been conducted with highly satisfactory results.

This base oil is obtained by taking a red lubricating oil similar to that used in the manufacture of spraying

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apparently increased, although consistently fumigated each year."

Biological Control.

At very considerable expense, the Australian lady-bird was imported into the United States and propagated by the million for the control of red scale infesting citrus trees. More recently the cryptolaemous beetle was imported for the control of the mealy bug.

The lady-bird failed to effect the commercial control, though this para-

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oil, and by a process of filtration through Fuller's earth and the subsequent washing with sulphuric acid.

This process removes the color and unsaturated hydro-carbons.

Undoubtedly an oil of this type has a wider margin of safety when sprayed on to fruit trees in full foliage than oils of less refinement. In addition, it has high scalecidal and insecticidal virtue.

A good spray must have two primary requirements—first, ability to destroy the insect, and, secondly, non-injurious to fruit and foliage.

Although every effort is made to make the oil spray foolproof, this, however, is impossible, owing to the many factors operating. The time of application is one of the most important to obtain maximum results with an oil spray.

Studying the growth of a citrus tree, we observe that under normal conditions there are three growing periods at varying intervals, when there appears to be a full pressure of sap forced through the tree. This might be termed three high tides in the flow of sap.

The correct time to use an oil spray is when the full pressure of sap is operating in the tree, as there is a corresponding ebb tide in the flow of sap when the cell system is not distended and is to a degree hollow.

The instinct of the female scale causes her to release the young scale when the full pressure of sap is on the tree and the consequent young, succulent growth is available.

It has been noted when the Indian wax scale was under observation that the female had started to release the young scale when there was a sudden rise in the temperature, and the leaves of the trees dried rapidly.

The scale were closely watched, and it was six weeks before the final release had been effected, showing that the scale was doing her utmost to protect the young until suitable plant food was available for them.

It is incumbent that all citrus-growers in a given area should combine for an attack of the various insects infesting their growth, as one careless grower can re-infest his neighbors, who might be doing their very utmost to obtain control.

Queensland.

Crop Reports . . The Banana Situation . . News and Notes
By Our Correspondent.

WHILST the northern part of the State has been deluged with seasonable rains, much of the south is perishing on account of its absence, consequently the crop prospects are not brilliant.

Reduced Citrus Crops.

Citrus particularly have thrown 50 per cent of the young fruit—except where irrigation is practised and such places are few. It is difficult to divert settlers to practically new areas where the populace is scarce and cultivation limited, but the most suitable area for citrus in southern Queensland is gradually receiving attention,

able water for irrigating the most fertile areas along its banks, where the price of land is not one-fifth of that of the coastal citrus districts.

Last season on the whole was not a prosperous one (on an average) to the citrus grower owing to excessive cropping and corresponding low prices—but where really first-class fruit was produced was more than compensated by the increased output.

The Banana Situation.

At present Bananas are a contentious subject, and one can hardly pick up a paper without noting some reference thereto—more particularly in reference to the quality sent to the southern markets. Grade standards have from time to time been prescribed, but the Commonwealth constitution does not admit of their application—except by the receiving State.

As the Committee of Direction of Marketing have for some years controlled the marketing in so far as providing special trains for transport and (rightly or wrongly) stating that they could and would decline to convey any lines except such as consigned through their organisation, one would infer that they would also exercise the right of refusal to accept inferior fruit; but this may have the effect of influencing some votes, which would, as in Stanthorpe, affect the situation.

It is announced that a ballot is to be taken throughout, Banana growers each

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and will take precedence on the coastal districts in which it is not possible to mature a crop of smooth skinned full flavoured fruit.

The Burnett River provides suit-

The Vacuum Oil Company Prop. Ltd. has issued a number of publications dealing with the control of scale and other insects infesting the fruit trees, and their service is at your disposal. We are anxious to help you in your problems, and in any district we would be glad to give demonstrations concerning the efficacy of Gargoyle Special Spraying Oil.

We know that it is only by the combined efforts of the scientists and the practical fruit producers that control can be effected, and it is the desire of the Vacuum Oil Company Prop. Ltd. to give all the assistance in their power to the primary producers in the Commonwealth.—[Advt.]

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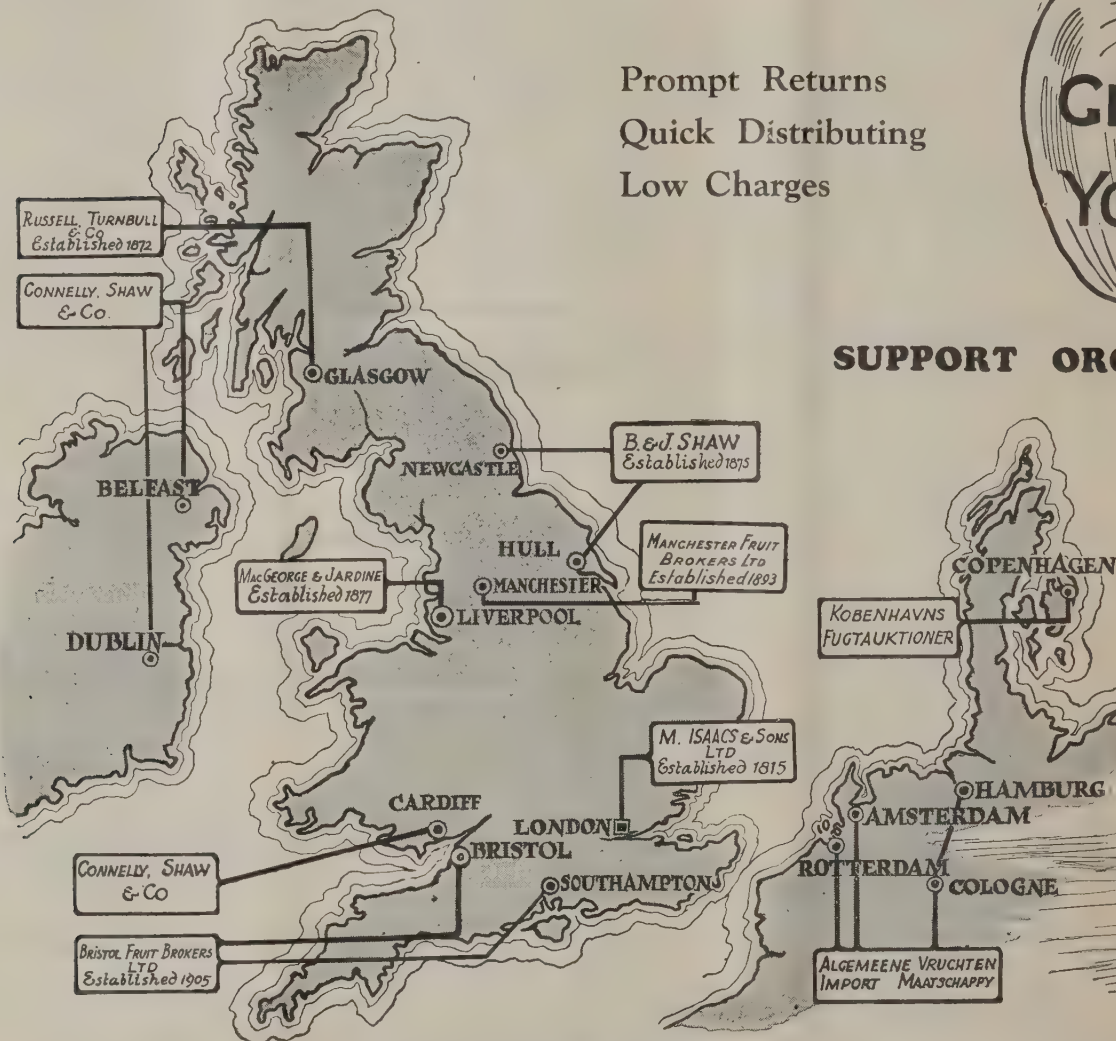
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By entrusting the sale of their fruit to any of the firms listed, dealing with Federated Brokers and obtaining the full benefit of above-board marketing.

The marketing of fruit is a complicated and delicate operation, and requires experience and special skill. The Brokers referred to possess these in full.

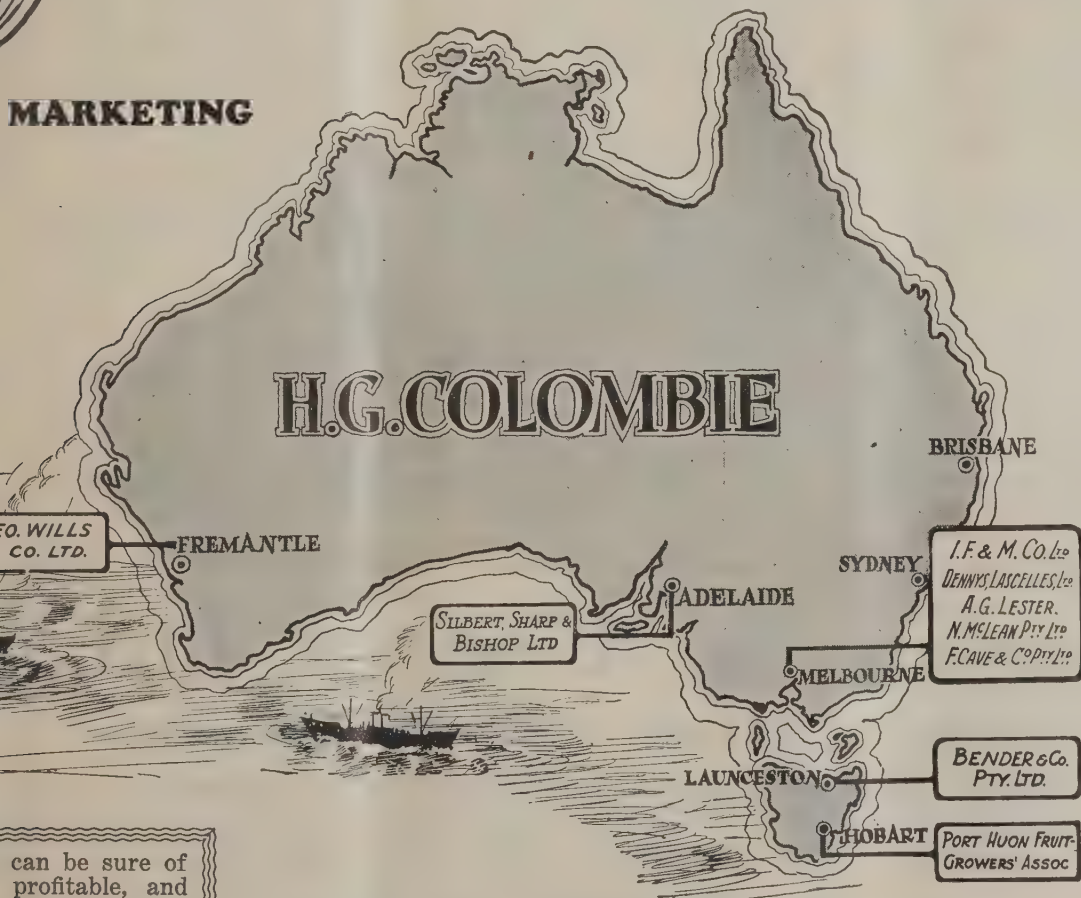
Every advantage of orderly marketing, regulated offerings, and the knowledge of what happens to your fruit, is assured to you by this organization not built up on paper, but created by generations of solid work.

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Profit by the experience of others, and **SUPPORT ORGANISED MARKETING.**

CENTRALISE the sale of your fruit **IN** the **ONE RECOGNISED AUCTION SALEROOM AT EACH PORT**, where Overseas Fruit is concentrated, and where large numbers of buyers attend regularly, ensuring **WIDE DISTRIBUTION.**

This **CONCENTRATION ENABLES BROKERS** to **REGULATE SUPPLIES** and **STABILISE PRICES.**

By this system **BUYERS** are **MADE** to **COMPETE** for the fruit to the **BENEFIT** of **YOUR RESULTS**; whilst by other methods Salesmen compete to obtain buyers.

CATALOGUES are printed for Buyers before sale, and reprinted after sale, **SHOWING ACTUAL PRICES PAID** for your fruit. No manipulation of results possible.

Parcels are sub-divided to enable all buyers to compete on equal footing.

Each parcel is valued by Auctioneer before sale, and lots not realising reserve prices are withdrawn.

having one vote, irrespective of whether his area is one acre or fifty acres—in respect of a "Board" acquiring all Bananas grown in the State.

There is no mention that the Board will have any connection or control of the situation if it eventuates, but the selling will be sealed with Messrs. Harrison & Ramsay.

Mr. Ranger is reported to arrange for lectures in the different districts favoring the scheme, and it is mentioned that Mr. T. Thatcher, previously a grower of temperate fruits, is taking up cudgels for the opponents of the scheme.

The odds are in favor of Thatcher, for it is generally recognised that the position of the Banana industry has not improved under the aegis of the C.O.D.

According to the leading light—the Director of Marketing, Mr. R. L. McGregor, co-operation without compulsion means disaster; it will probably be recognised later, that with compulsion, a more explicit term will be applicable.

None of the advocates, salaried or otherwise, have come to light with an explanation as to what benefit resulted from the £70,000 odd expended in connection with Council of Agriculture before its practical collapse.

We are very much over-legislated for, the effect of such legislation being (as suggested in initial reference to the Council of Agriculture) to provide lucrative positions for those successful in securing them. A few of the chief faddists who suggested limitation of planting of such crops as Tomatoes, should be domiciled upon a reasonable area of land

and compelled to maintain themselves from the fruits thereof. Possibly they might absorb a reasonable appreciation of production and just a little of marketing by compulsory organisations.

The Banana position is certainly serious, but no marketing scheme is going to improve the fruit. Admittedly the continuous drought has been disastrous, but we cannot dispute the most obvious fact that a very high percentage of land planted is totally unfitted for this crop, for which the wiles of the land agents are mainly responsible—aided by the gullibility of the prospective purchaser.

The Stanthorpe (temperate) fruits have been well maintained on the market for some time—ripening on the whole being much earlier, at least three to four weeks earlier than usual, and stone fruits are rather on the small side. Apples and Pears are rather immature. A fair percentage of cool stored fruit of the former has been in evidence, possibly for decorative purposes, for the quality had little to recommend it, though freely disposed of in the markets.

On account of the early opening season it is expected that the temperate fruit season will close a month preceding that of last year. Complaints re insect diseases have been almost entirely absent, and the presence of mould quite unknown. The coastal Grape crop was very poor, but indications suggest a very satisfactory return from the southern tableland. Late frost was very slight, and no information has been made available of the effect of "smoke bombs" imported from France to try the effect of smoke against frost.

CURCULIO BEETLE.

Damage to W.A. Orchards.

Curculio beetles are reported to present in millions in the Donnybrook (W.A.) orchards; 15,000 beetles were taken from bandages on one tree; the beetles were eating fruit spurs and leaves. At a meeting at Bridgetown, the fear was expressed that next year's crop would be ruined through the beetles eating the fruit spurs.

It was resolved to request the attention of the Entomologist, Mr. Newman. Local experiments were being successfully tried; it was found that the beetles could be kept from the trees with the use of a tin funnel at a cost of 4d. per tree.

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The new dessert Peach, Taylor's Anniversary Red, has won favorable attention. The raiser is Mr. R. H. Taylor, of Archer-street, Concord, N.S.W.

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The Case for Both Sides.
Need for Mutual Conference Emphasised.

Canegrowers' Viewpoint.

Sir,—Your November issue contains an article on the sugar embargo, based wrongly upon a comparison of world's raw sugar prices plus duty, with the price of Australian refined sugar, which is being supplied to fruit processors. This comparison of world's raw price with Australia's refined price has been so frequently

australian annual requirements for the home market" is also quite incorrect and is 25 per cent. overstated.

Australian manufacturers damned the Australian export trade during the war by attempting to manufacture jam and process fruit with this £20 per ton sugar. All manufacturers are asked to pay is the Australian price for Australian consumed jams and preserved fruits; for their export trade they get our sugar at a slight advantage over their competitors on the other side of the world; and again, may we not ask: Why should the Queensland sugar producer be the only section of the Australian people who should be asked to carry the "White Australian" policy?

If that policy is worth anything to Australia, surely the whole of Australia should be asked to bear its share of it. Again, may we not be permitted to draw the attention of the public to the great discrepancy between the price paid the fruitgrower and the price paid for fruit in jam and canned fruit.

The difference in the price of raw sugar, Australian consumption and refined used in the manufacture of jam and fruit processing represents an increase of 12.3 per cent. Do manufacturers complain of this increase in the cause of a White Australia? It would be interesting to know what is the increase in the price of fruit. The increase in the price of sugar from producer to consumer is 55.5 per cent., while the increase in fruit is anything up to 600 per cent. Why hark back to pre-war days? Has anything else gone back to pre-war prices? Certainly not! Then why sugar?

"The Fruit World's" statement that manufactured jam has fallen 18,500,000 pounds since 1912 will not bear analysis. It may be perfectly true that the consumption of "manufactured jam" has fallen to this extent, but it does not follow that the consumption of jam has done so. In fact, there is ample evidence to show that such is not the case. Jam manufacturers tell us that 60 per cent. of our jams is sugar; therefore, on the above statement, the consumption of sugar should be reflected in the apparent fall in jam consumption, and should have fallen 11,000,000 pounds, or approximately two pounds per head, while

actually there has been substantial increased consumption of sugar.

In 1912, the consumption of sugar was 112 pounds per head, but in 1927 it had risen to 119 pounds per head. In 1927 the population was 6,234,854, sugar consumed 743,368,000 pounds. This, divided by the population, gives the above annual consumption of 119 pounds per capita.

The facts are that the avariciousness of proprietary jam manufactur-

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made that it seems useless replying to criticism of such a nature.

It is remarkable that "The Fruit World" and its correspondents persist in referring to Australian sugar and imported sugar in similar terms. How often have we to point out that the difference between £30/6/8 for Australian sugar and £20 for imported is the difference between refined and raw?

The "40,000 tons shown as the Aus-

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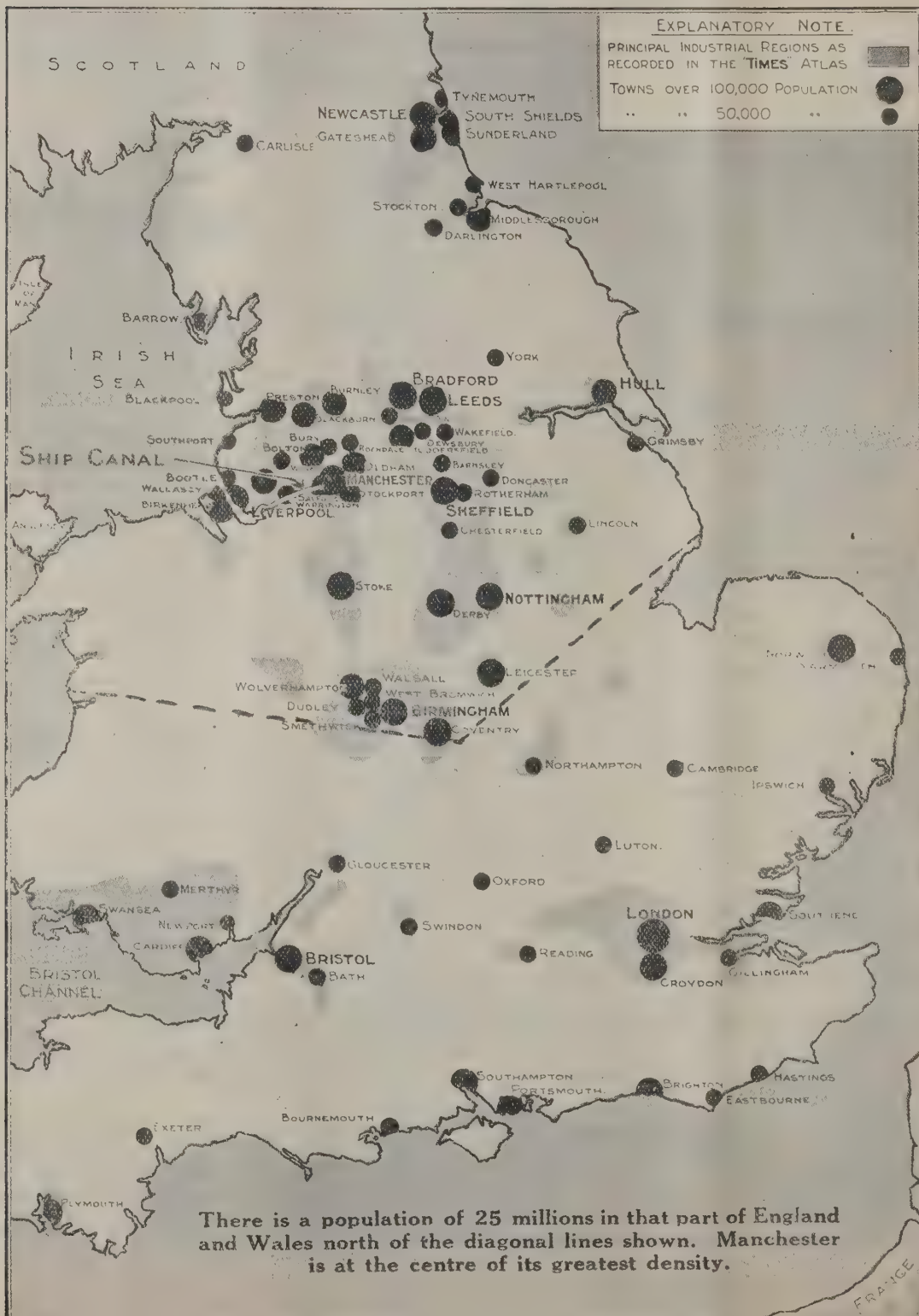
ers and their inferior jam has compelled housewives to make their own jam, hence the apparent shortage.

The claim of a correspondent that the embargo is responsible is upset by the true statement of fact in "The Fruit World": "That the present state of the fruit industry is entirely traceable to the Governments of the States sponsoring and financing large settlements for the production of these fruits."

"The Fruit World" has hit the nail squarely on the head, and admits that over-production, and not sugar, is responsible for the present state of the fruit industry. The fruitgrower can rest assured that he has the sympathy of the sugar-growers, who are

INDUSTRIAL MAP OF ENGLAND & WALES

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also keenly suffering from over-production.

The high price of cane lands cuts no ice with those who have any knowledge of the facts. A highly improved cane farm is just as well worth £100 per acre as is a fruit orchard worth £150 per acre. Why quote the price of highly improved and well developed cane farms, while ignoring the fact that cane land in its virgin state can be purchased for £14 or £15 per acre?

We would remind the correspondent of "The Fruit World" that the sugar industry keeps employed some 20,000 workers—and 10,000 farmers and families—not a mere 4,000 cutters, as stated, and that there is a legitimate

from the proprietary manufacturers than they are getting to-day.

Now that the Australian Jam Company has featured its difficulties owing to what that company terms the unfair assistance rendered to co-operative canneries, it might be expected that in the interests of fruitgrowers the "Fruit World" will take up the question of fruit boards to fix fruit prices for manufacturers, similar to cane prices fixation. I would earnestly recommend the fruitgrowers themselves to give this aspect some attention.

A conference between sugar-growers and proprietary jam manufacturers will not get us anywhere, but a conference between fruitgrowers and sugar-growers might do a great deal in assisting the fruitgrowers to get legislation along the lines of our Cane Prices Act, whereby the fruitgrowers would meet proprietary jam manufacturers on the same level and give them—the fruitgrowers—some say in fixing the price of fruit used in jam-making and fruit-processing.

An exchange just to hand has the following:—"The farmer now possesses much greater bargaining power than he had formerly, through centralised selling, which has followed the establishment of the consolidation of existing co-operative associations and commodity boards."

Until the fruitgrowers adopt some such policy they will remain at the mercy of proprietary manufacturers.

Yours faithfully,

W. H. Doherty,

Secretary, Queensland Canegrowers' Council.

The points raised by Mr. Doherty will be dealt with in our reply.

LETTER FROM MINISTER FOR CUSTOMS.

Sugar and Canned Fruit.

We now publish a letter written to Hon. W. C. Hill, M.P., (who represents in the Federal Parliament the Goulburn Valley and surrounding fruitgrowing areas), by Hon. H. S. Gullett, M.P. (Minister for Trade and Customs).

The letter is as follows:—
Commonwealth of Australia,
Department of Trade and Customs,
Canberra, F.C.T.,
December 10, 1928.

The Honorable W. C. Hill, M.P.,
Parliament House,
Canberra.

My dear Mr. Hill,—

I am in receipt of your letter of November 29, 1928, addressed to Senator

Crawford, with reference to the attached letter of November 20, addressed to you by Mr. W. R. Bray, of Merrigum, Victoria. Senator Crawford has asked me to furnish you with a reply to the several points mentioned by Mr. Bray.

With regard to the inquiry as to whether it is a fact that the Australian canning industry uses 40,000 tons of sugar annually, I desire to state that the production of canned fruit for the year 1926-27 was 57,583,021 lb.—the sugar contents of which would amount to approximately 2,570 tons. The production figures for 1927-28 are not yet available, but it is believed that the quantity was slightly larger than in 1926-27, and would re-

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The fruitgrowers have our entire sympathy, and we quite agree that a conference would do much to bring about a better understanding, an understanding between fruitgrowers and sugar-growers. The sugar-growers will always be willing to help their fellow-producers to get a better deal

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quire the use of not more than 2,800 tons of sugar.

The price of refined sugar for the processing of fruit products is £30/6/8 per ton, as stated by Mr. Bray. This price is for sugar delivered to the inner suburban radius in capital cities.

With regard to the statement in "The Fruit World" that this price is about £10 per ton more than the cost of imported sugar plus the present Customs duty of £9/6/8 per ton, I have to state that the cheapest sugar of the same quality as that supplied to Australian canners, quoted in the world's markets on October 29, 1928, would have cost, at least, £15/9/6 per ton landed in a factory situated in the heart of any Australian capital city.

When £9/6/8 per ton Customs duty, say £1 per ton for storage, double-handling costs, and deterioration of sugar whilst held in store, are added to the landed cost of £15/9/6, the resultant cost to the importer would be £25/16/2, which is only £4/10/6 per ton less than the price now paid by fruit processors.

This present disadvantage is much less than the £10 per ton quoted by the "Fruit World," and it should be

remembered that it is entirely due to the recent collapse of the world's sugar markets, due to over-production in all the principal sugar-producing countries and the recent announcement by the Government of Cuba (which country produces a very large proportion of the world's sugar) that the restrictions on production that have existed there for several years would be lifted forthwith.

When the world's prices for a reasonable period, of, say, any two or three years, are considered, the Australian price of £30/6/8 per ton to fruit processors is not disadvantageous to that industry.

Mr. Bray adds that if the "Fruit World's" statement that an excessive charge of £10 per ton on a consumption of 40,000 tons of sugar per annum is correct, then it is easy to see why the fruitgrowing industry is collapsing. I have already pointed out that not more than 2,800 tons of sugar are used annually in the canning fruit industry, and that over a reasonable period there is no surcharge over world's parity plus duty in the price of £30/6/8 per ton.

Apart from this, however, it appears to be worth while bringing under Mr. Bray's notice the fact that the cost of sugar has very little effect indeed upon the canning fruit industry, as the entire cost of sugar at £30/6/8 per ton in one standard 30 oz. can of fruit averages only .62d. in city canneries and .75d. in country canneries. Accordingly, whilst the present unduly low world's parity indicates a temporary disadvantage of £4/10/6 per ton, this amount is equivalent to approximately only one-tenth of a penny per can of fruit, or less than one penny farthing per dozen cans.

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I desire to point out also that from thirty to forty-five per cent. of the production of canned fruit is exported from Australia, and that the export quantity carries a rebate at present of £14/15/- per ton on the sugar contents, thus reducing the cost of sugar in the exported canned fruit from £30/6/8 per ton to £15/11/8. Furthermore, most of the Australian canned fruit is exported to Great Britain, where a preference in the Customs duty is granted by the British Government of an amount equivalent to approximately £4 per ton on the sugar contents. So far as the exported canned fruit is concerned, the price of sugar in Australia is never disadvantageous, as it is always reduced by means of the rebate mentioned to slightly below what it would cost manufacturers to import the cheapest foreign sugar of equivalent quality and land it in their factories without paying duty.

Yours faithfully,
(Signed) H. S. Gullett,
Minister for Trade and Customs.

"The Fruit World's" Reply.

Our Figures Correct.

Need for Conference Emphasised.

Perhaps the most startling commentary on Mr. Doherty's letter is the fact that owing to economic conditions, fruitgrowers have a very limited outlet for their jam fruits this season. The jam and canning factories are operating on a reduced scale. This is very unfortunate for the growers of berry and soft fruits. It is poor satisfaction for these growers to be told from Queensland (see "Fruit World" November, 1928, page 425), that only 8 per cent. of fresh fruit is made into jam (in this percentage are included Apples, Oranges, Bananas, etc.). The fact is, of course, that of the fruits grown for jam-making, the factories normally take from 60 to 95 per cent. of such fruits.

The facts as published in our November issue are fairly stated. Not even the most ardent sugar advocate

could quarrel with the unanimous decision reached by the representatives of private enterprise jam manufacturers and fruit canners. These are all as anxious to see the sugar industry thrive and prosper as those directly concerned in that industry.

It surely is a very serious matter that in the year 1912, with a population in Australia of 4,700,000, 85,800,000 lb. of jam were manufactured in the Commonwealth, while in 1926, when the population was given as 6,100,000 (an increase of 1,400,000 people), the decline in the production of jams was no less than 18,500,000 lb.

It seems to be overlooked that for every ton of fruit manufactured into jams, a little over one ton of sugar is required, which surely is positive evidence that the price of sugar is very vital to the fruit industry.

Manufacturers in New Zealand are paying £21 per ton of 2,240 lb. for sugar, and in South Africa £17 per ton of 2,000 lb. This is for refined sugar, and there is a duty in that country (South Africa) of almost the equivalent of our Commonwealth duty, and despite the big production of sugar in South Africa, other countries have been shipping sugar there and paying the duty.

A duty will always determine the true cost of sugar, while an absolute embargo prohibiting all importations disposes of all competitive buying or selling, and it is not easy to get a true price when no business is possible.

It is interesting in this connection to read in the monthly journal of the Melbourne Chamber of Commerce a dignified reply by the Chairman of the Johannesburg Chamber of Commerce to statements made by representatives of the South African sugar industry, which industry had criticised other commercial interests in South Africa in relation to sugar. The national character of the sugar industry is favorably recognised and appreciated, but that industry is reminded of its responsibilities and obligations to the people as a whole. The world's parity for refined sugar is quoted at £12/16/9 per ton of 2,000 lb. Cheaper sugar—unrefined—is requested. Continuing, the President of the Johannesburg Chamber of Commerce states:—

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"Undoubtedly for some time now there has existed a spirit of antagonism between the industry and commerce as a whole. I am confident that there is no good reason for such a spirit to exist between the two interests. In past years commerce co-operated fully with the sugar industry, and commerce, I feel sure, is prepared to co-operate again to-day and in the future; but to bring about that co-operation it is necessary for the industry, once and for all, to cease questioning the

bona fides and the honesty of any criticism that may be offered up by commercial opinion."

Mr. Doherty states the figure of 40,000 tons shown as the Australian annual requirements for the home market is 25 per cent. over-stated. These, however, are the figures of Mr. Gepp, Chairman of the Migration and Development Commission, who has been engaged for some time in reporting on the fruit industry, and whose report, it is understood, will soon be available.

Again, Mr. Doherty is entirely wrong in stating that Australian manufacturers destroyed the Australian export trade during the war, by attempting to manufacture jam and process fruit with imported sugar. A little imported sugar may have arrived in Australia early in 1914 in execution of orders placed before the start of the Great War.

Manufacturers were fortunate to get Queensland sugar, and no manufacturer, whether he was doing local or export trade, was able to get any other since.

Why, then, does Mr. Doherty raise the point as to the Queensland sugar producer being the only section of the Australian people who should be asked to carry the "White Australia" policy?

If we assume in round figures the annual consumption of sugar in Australia is 300,000 tons, and the price before the war was £20 per ton, and is now £36, it will be easily seen that the Australian consumer is making a fine contribution of £4,800,000 annually, without taking into account the added value of the duty, in round figures another £3,000,000, or a total of £7,800,000.

Mr. Doherty then deals with what he regards as the discrepancy in the prices paid for jams and canned fruits; he is equally unfortunate here.

The two biggest selling jams in Australia are Apricot and Plum, and in Victoria at least, the prices for these varieties in 1913 were 8/3 and 6/9 per dozen for 27 oz. net tins. The prices to-day are 7/6 and 6/6 per dozen respectively.

In 1913, prices of canned fruits in Victoria were: Apricots, 8/6; Peaches, 10/9; and to-day the same fruits in same size cans are selling at 8/6 and 8/3 per dozen respectively. For the same dates, Queensland canned Pineapples have advanced from

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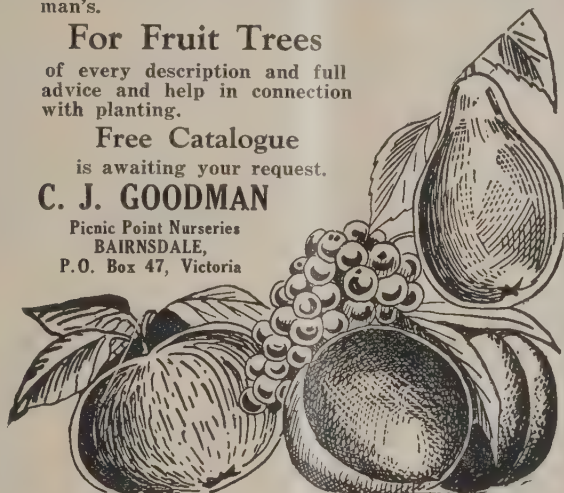
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6/6 per dozen to 13/- per dozen; so that the prices for the first-mentioned jams and canned fruits are actually much lower in Victoria than pre-war, if only the increased cost of sugar is calculated (ignoring increased cost of wages, tinplates, labels, cases, etc.), although our correspondent states that the increase is anything up to 600 per cent. Manufacturers in Victoria and the States other than Queensland have, of course, nothing to do with the increase in preserved Pineapples, for Pineapples are only grown in Queensland. The same correspondent, while admitting the serious reduction in the manufacture of factory jams, believes that housewives are making more for themselves on account of the inferior quality of factory jams. He is probably one of very few who would be bold enough to say that the quality of factory jams was inferior to the quality manufactured before the war.

As regards the housewife making more or less jams, it is reasonable to assume that the high price of sugar is affecting the production of home-made jams in exactly the same way as the factory article. This is borne out by a statement recently made by the President of the Federated Housewives' Association of Australia, who, after careful research, stated that housewives were making much less

jam than when sugar was cheaper, and that the high price of sugar was the cause of the decline in this housewifely art.

The fruitgrowers and the jam-makers are only anxious for a policy that "will live and let live," and the suggestion in the "Fruit World" for representatives of these industries to meet in conference so as to better understand the relationship appears to be reasonable.

* * *

There is not much to answer in Mr. Gullett's letter to Mr. Hill. The Minister of Customs only deals with the sugar contents of canned fruits, and does not state whether 40,000 tons of sugar are used annually in the jam and canning industry.

Manufacturers have always maintained that the finest Java white sugar is for manufacturing purposes quite equal to what is regarded as the super refined Australian sugar.

The fact that with the big duty in South Africa, sugar is being sold there to-day at £17 per ton of 2,000 lb., and despite a surplus within their own country, refined sugar is being imported into South Africa, is abundant proof that the Minister has been misinformed. It is extraordinary that a Minister can sign a statement that

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over a reasonable period there has been no surcharge over world's parity plus duty in the price of £30/6/8 per ton. The Minister then returns to the statement that the proportion of sugar used in the canned fruits industry is very small; no one has ever disputed this. With the manufacturers of jams, the sugar is very important, for the finished product represents at least 62 per cent. sugar.

* * *

Summed up, it is evident that there is room for a better understanding between the sugar and fruit industries. More could be settled in a round-table conference than by years of tilting per medium of the newspaper.

There is a spirit of earnest enquiry abroad. We want to emulate the spirit of another country in a somewhat similar case, and to remember their slogan, "Find the facts, face the facts, follow the facts."

Australia has made economic blunders, but that is no reason why they should be perpetuated. We believe that nothing but good to all concerned would follow a conference of commercial sugar producers and commercial sugar users. We are yet a nation in the making.

Visitor from New Zealand

Mr. R. J. Campbell, Director of New Zealand Horticulture Division.

Mutual Trading Discussed.

Mr. R. J. Campbell, Director of the Horticulture Division of N.Z., visited Australia during November and December. He travelled through several States, obtaining desired information regarding fruit and horticultural industries.

Referring to the fruit tree question, and the action of the N.Z. Government in placing an embargo on Australian Apple trees some years ago (which embargo has now been lifted), Mr. Campbell states that his Department acted solely in the interests of the N.Z. fruitgrowers, and were not influenced by Dominion nurserymen.

* * *

THERE are other aspects of trade adjustment to which Mr. Campbell draws attention. For instance, Australia will not receive any fruit or plants of the order rosaceae from N.Z., because of the presence of fire blight in a confined area in the North Island. There is no fire blight in the South Island, and full guaran-

tees could be given that any fruit exported was uncontaminated.

While it was unlikely that New Zealand would export Apples to Australia because of the normally abundant crops in the Commonwealth, the fact that there was an embargo raised difficulties when mutual trade conditions were discussed.

Here is an aspect of the situation pointed out by Mr. Campbell which is not generally recognised by fruit-growers.

America will not take fruit from New Zealand because of the fear of fruit fly from Australia!

This is the position. N.S.W. sends considerable quantities of Oranges to N.Z. There is careful inspection prior to shipment from Australia, and careful inspection on arrival in New Zealand. There is no fruit fly in N.Z., yet U.S.A. adopts the attitude that it is possible for fruit fly to enter the Dominion, and to carry infection to U.S.A. should fruit from the Dominion be permitted entry into U.S.A.

N.Z. desires to export her Pears to New York, but cannot do so unless she prohibits citrus from Australia. It would not even do to limit the export of citrus from such Australian States as have not the fruit fly, for these States have not a rigid embargo against the entry of citrus from fruit fly-infested States.

Thus, to secure a trade in fruit between N.Z. and U.S.A., the Dominion would need to place an embargo on fruit from Australia.

Mr. Campbell urges a common-sense view of these mutual trade relationships, and a spirit of understanding.

There are other matters involved. California has a considerable portion of the trade in supplying N.Z. with dried and canned fruits. Australia would dearly like to obtain this business, yet Australia has trade barriers against the importation of N.Z. butter, potatoes and other products.

* * *

The foregoing matters are subjects for consideration between the parties concerned, and out of those discussions it is hoped that the necessary adjustments will be made. While still observing essential quarantine provisions, it is possible to improve trade relationships between the Commonwealth of Australia and the Dominion of New Zealand.

Dennys, Lascelles

Limited.

Temple Court, 422 Collins Street, Melbourne

HEAD OFFICE AND WOOL STORES AT GEELONG

*Exporters of Fresh, Dried and Citrus Fruits
to England, the Continent and New Zealand.*

Personal Supervision of all Consignments at Port of Shipment.

Prompt Returns.

Importers of Wrapping Paper
and Swedish Woodwool

Suppliers of Cases
Hardwood or Canadian.

"To choose the Best is Wisdom"

Opportunity Is knocking at your door

NOW!
Right at the
beginning
of your season
make up your
mind—

That you are going to get the HIGHEST POSSIBLE RETURN for your year's working and planning.

That your fruit must be marketed in the BEST and most attractive manner.

That you cannot profitably do this by HAND LABOR.

That a "LIGHTNING" FRUIT GRADER is what you need to help you attain the prosperity we all look for.

A letter will bring our latest catalogue by return of post, together with any information you require.

WRITE TO-DAY WHILE OPPORTUNITY IS STILL KNOCKING.

THE "LIGHTNING" FRUIT GRADER CO.

5 Hoddle Street, Collingwood, N.9, Melbourne, Vic.

Cable and Tele. Address: "Lightning," Melbourne.

NEW ZEALAND.

Apple Crop Average.

The Apple crop is developing well. Average crops are reported from Hawkes Bay, Auckland, Canterbury, Marlborough, Motueka, Nelson, Wanganui, Manawatu, Wairapa, Thames, Bay of Plenty. At Gisborne and Hamilton the crops are light. Pears light to medium

Whangarei (28/12/28).

Mr. L. Hanlon, Whangarei, N.Z., reports as follows:—

The principal fruits grown here are Apples, Pears, Peaches, Plums, Oranges and Lemons. The Apple crop is light; in some cases, quite a failure. Pear crop, fair to good, where not attacked by Pear midge, which has destroyed both leaves and fruit in some cases. Peaches generally a heavy crop. Plums, generally

a light crop, especially English varieties. Both Oranges and Lemons promise well for next crop.

The very heavy crop of Apples last season probably accounts for the lighter crop this season. Plums behaved in a peculiar manner this spring. After starting to come into blossom, a check occurred, and they stood still for a considerable time, then came again into bloom and blossom, but failed to set fruit on this second lot.

Marlborough (26/12/28).

Crops are promising well; certain varieties of Apples are light. The estimate is for 60,000 cases.

APPLES FOR GERMANY.

Duty on Australian Fruit Heavier Than on that from New Zealand and America.

The Western Australian Fruit Shippers' Committee has written to the Minister for Markets (Mr. Pater-son), directing attention to the severe handicap under which Australian Apples are placed as compared with Apples from New Zealand and America, when shipped to Germany. The duty on Tasmanian and Australian Apples entering Germany is fif-

teen marks per hundred kilogrammes, as compared with a duty on New Zealand and American Apples of seven marks per hundred kilogrammes. This is equivalent approximately to 2/9 per case on Australian fruit, as against 1/3 per case on fruit from New Zealand and America, which means that Australian Apples are at a disadvantage of 1/6 per case.

The W.A. Fruit Shippers' Committee further states that the German market is a most useful outlet for Australian fruit, particularly Western Australia, and wishes to know whether some arrangements cannot be made with the German authorities to place Australian Apples on the same basis as fruit from other countries.

The request from Western Australia is supported by the other Apple-exporting States.

AGENTS WANTED

To Influence Consignments of Apples by Reliable Firm

Write, Stating Terms, Etc., to—
HARTSTOKE, FRUITERS LTD.,

Brentford Market, Middlesex.

Code: A.B.C., Fifth Edition.

Cables: "Hartstoke, Brentford, Middlesex."

-LEMONS-

We are the largest Buyers
in Australasia

C. M. BROOKE & SONS
73 Whiteman St., South Melbourne, Vic.

SALES DEPOTS:

No. 542-543 Covent Garden Market.
No. 97, 98, 101 Long Acre.
No. 1 Endell Street.

Cables—Spinach, London.
Codes—A.B.C., 5th Edition; Bentley's.

OFFICES.
97, 98, 101 Long Acre.

LONDON CALLING FRUITGROWERS !!!

Consign your Fruit to

PASK, CORNISH & SMART

=====COVENT GARDEN=====

LONDON, W.C.2, England

THE PROGRESSIVE FIRM of FRUIT SALESMEN

Who receive consignments of Apples, Pears, Oranges, and Grapes all the year round, thus assuring a clientele of best buyers. Spacious Sale Rooms suitably situated to display fruit to very best advantage.

Reasonable advances made against Bills of Lading. Balances paid by cheques drawn on Australasian Banks.

Sales entirely by Private Treaty

Last year handled more than TWO MILLION Packages of English, Colonial and Foreign Fruits.

Represented at—

TASMANIA
TENERIFFE

SOUTH AFRICA
NEW YORK

LAS PALMAS
AZORES

And all Principal Fruit Growing Centres in Engl and, France, Spain, Belgium and Holland.

Tasmanian Representatives—E. R. COTTIER & CO., A.M.P. Buildings, 88 Collins St., Hobart.

REPRESENTATIVES REQUIRED in S. Australia, Victoria & W. Australia.

Picnic Point Nurseries.

Old-Established Well-Kept Nursery
at Bairnsdale, Vic.

Forty Years Raising Fruit Trees.

THE prettily situated township of Bairnsdale is 170 miles from Melbourne, and is practically the terminus of the railway line, which passes through a number of well-known fruitgrowing centres, including Pakenham, Beaconsfield, Officer, Narre Warren, Drouin, Tynong, Garfield and Bunyip.

The fruit tree nursery, orchard, and seedgrowing farms of C. J. Goodman's Picnic Point Nurseries are situated in Bairnsdale. The original nursery was established by the late Mr. C. J. Goodman (who died on July 5, 1910), at Picnic Point, Bairnsdale, in 1889, but the need for more land for raising fruit trees necessitated the removal of the nursery to other parts of Bairnsdale. The total area under intense cultivation is 400 acres—including nursery, orchard, Asparagus and seed farms.

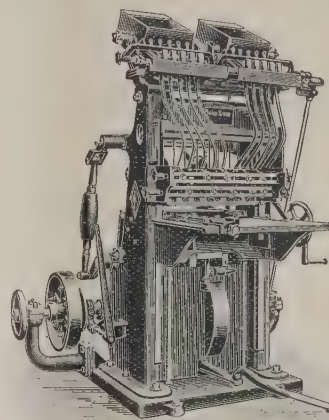
The stocks of fruit trees which are practically ready for sending out this year have made wonderful growth, and the trees are in perfect condition. A feature of the nursery throughout is the total absence of weeds. This is due to the continuous method of cul-

tivation which is insisted upon by the present proprietor of the nurseries, Mr. G. W. Peart. His method is to keep the weeds out when they are coming, with the result that they do not get an opportunity to develop. The fertile and easily worked soil, free from weeds, enables the fruit tree stocks to secure complete nourishment from the soil, and this is reflected in the condition of the trees.

Another rule regularly followed at these nurseries to ensure strong, sturdy trees, is to top the young trees where necessary at a height of 10 to 14 inches. A requisite tree thus has three or more branches with a straight, strong stem. This also avoids any possibility of the trees breaking at the union through handling. Every tree is staked, and they are perfectly clean and free from insect pests.

At the main portion of the nursery some 32 acres are devoted to yearling trees ready for sending out this season, and stocks for future use. The trees are planted in rows 2ft. 4in. apart, and much closer in the rows than most nurseries.

In this section some particularly good Apple trees ready for lifting and sending out this year were noted. The varieties included Granny Smith (34,000), Cleos., Dunn's, Jonathan, Delicious, Democrat, Yates, Rome Beauty, Gravenstein, and others. Mr.



Bohm & Kruse's

Case Nailing, Case
Printing and Shook
Splicing Machines
which are Time
Saving and Profit
Increasing.

Keep yourself acquainted with modern developments in machinery. Every new labor-saving device must affect you. If your competitor adopts it, it HANDICAPS you; if you adopt it, it AIDS you.

Particulars will be gladly given by the distributors:

Victoria, South Australia,
Tasmania:
MESSRS. McPHERSON'S PTY.
LTD., Collins St., Melb., and
Weymouth St., Adelaide.

New South Wales, Queensland:
MESSRS. GOODALL & CO.,
Kent St., Sydney.

Factory Representatives:
RINNE HARRIS Pty. Ltd.
434 Collins St., Melbourne

Irrigation Hose in heavy Finest Scotch Duck

	A	B	C
3-inch	5d.	6d.	7d. per foot.
4-inch	6d.	7d.	8d. " "
5½-inch	7½d.	9d.	10d. " "
7-inch	10d.	12d.	13d. " "
9-inch	14d.	17d.	18d. " "
11-inch	16d.	18d.	19d. " "

HAY STACK COVERS

For Hay and Lucerne Stacks, etc.

	3-Star.	4-Star.
12 x 20	£2 3 0	£3 1 6
12 x 24	2 13 6	3 15 0
18 x 20	3 15 0	4 11 0
18 x 24	4 2 6	5 9 0
18 x 30	5 2 0	6 15 0
21 x 30	5 17 6	7 17 6

We can supply these covers in any length, 3ft., 6 ft., and 9 ft. wide, suitable for covering drying racks.

Any other size at same rates. Ropes, 3/6 Extra.

Verandah Blinds, Window Blinds, Duck Tarpaulins, Tents, Camp Stretchers and all Classes of Canvas Goods.

Large Stocks of First-class Secondhand Sacks.

Please write for prices and samples.

WYETT MFG. CO. PTY. LTD.

21-23 BELLARINE STREET, GEELONG, VICTORIA.

'Phone 1688.

Peart finds that there is a larger demand than previously for yellow Apples, probably due to the fact that the Continental markets prefer yellow Apples.

Apriots, Peaches, Pears and Plums are grown both here and at the other sections of the nursery, and include the following:—

Pears.—Winter Cole, Winter Nelis, Josephines, Packham's, Beurre Bosc, Keiffer, Comice, Howell's, Clapp's Favorite. The numbers vary, but very large quantities of the varieties that are more freely sought after are grown.

Apriots.—All on Myrobalan stocks, ready for 1929 delivery, were noted in large quantities. These trees are suitable for any class of land. The stock comprises American Royal, Oullins, Blenheim (Shipley), Trevatt, Newcastle Early, Tilton, Royal (this variety is sought after for planting in Western Australia), Moorpark (which seems still to be the standard variety for planting in South Australia, Tas-

mania, and Victoria), and others.

In another section of the nurseries we saw 25,000 Apricots on Apricot stock big enough now for lifting.

Dessert varieties of Peaches (all worked on Peach seedling stocks), include Dunhelm (Bell's November) (grown exclusively for Western Australia), Alexander's Early, Brigg's Red May, High's Early Canada, Hale's Early, Mayflower (the earliest of the lot), and many others.

Leading canning Peaches growing were:—Pullar's Cling, Pelora, Golden Queen, Levis Cling, Phillip's Cling, and other cling and freestone Peaches.

In English Plums, particularly large stocks of the three wonderful dark Plums, Diamond, Grand Duke, and President, have been worked up, all one year old trees. There are also good stocks of other varieties.

Japanese Plums comprise Wickson, Beauty, Burbank, Satsuma, Santa Rosa (still considered to be the best of the Jap. Plums). It is still a good seller—the stock at present is over

4,400 trees), Wilson (grown exclusively for Queensland growers), and others.

In Prunes, D'Agen (is still the standard, and likely to remain so), Robe de Sargent, Splendour, and others were noted.

Mr. Peart is trying out two new Prunes from California in Coates and 470 French. A large quantity of Nectarines have been raised this year, including 4,000 Goldmine and others.

The stock of Cherry trees at Goodman's Nursery contains 24,000 trees worked on Mazzard seedling and Kentish stock. The varieties are St. Margaret, Florence, Burgsdorf, Napoleon, Bedfords and others. Cherry trees are reported to be scarce in most places, and it is interesting to note a good quantity here.

In Walnuts, some very nice healthy trees were noted, including Common English, Franquette and Mayette, Chaberte.

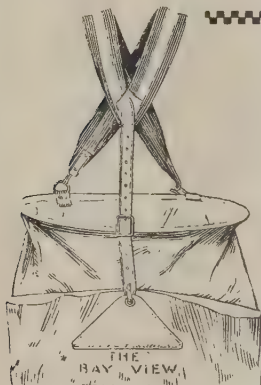
Other saleable trees include Almonds, Flowering Cherries, Quinces, small fruits, etc.

A nice lot of acclimatised Oranges and Lemons complete the stock at this nursery.

Ample provision is being made for fruit tree stocks for future working and trade sales. Pears include some 36,000 stocks ready for budding, mostly French Seedlings. Some are worked on *Pyrus usuriensis* blight-proof stock.

Another block of 60,000 French seedling Pear stocks looked particularly fine.

Apricot stocks for budding are present in large quantities; most of these are from stones saved at C. J. Goodman's cannery. A new Australian seedling Apricot is also being tried out.



"BayView" Fruit Picking Bag

CAN BE USED FOR ANY CLASS OF FRUIT

Allows use of Both Hands in Picking

No Bruising of Fruit

Weight Carried on Shoulders instead of Back of Neck

Mr. J. LANG, President of the Australian Conference of Fruitgrowers, writes:—"After two seasons' use I am well pleased with the Bags: fruit receives minimum of handling, and is less liable to damage. They are also a great time saver."

PRICE, 12/6 EACH

Postage in Victoria, One bag, 1/3. Two bags, 2/-
Postage, Interstate, One bag, 2/2. Two bags, 3/8

F. R. MELLOR, 440 Elizabeth St., MELB.

ORCHARDISTS !

For Successful Fruitgrowing, Insist on Using
ALBAROL (Reg.) WHITE OIL

We place the following facts before your notice for perusal:—

ALBAROL is the Most Efficient Spraying Material

Manufactured, because:—

- (1) It can be used at any period of the year.
- (2) It can be sprayed on your trees during any time of the day, irrespective of prevailing weather conditions. **ALBAROL DOES NOT BURN THE FOLIAGE.**
- (3) Containing only heavy petroleum oils, scientifically combined at our Laboratories, **ALBAROL** allows for a perfect covering of all the tree.

ALBAROL used at the astounding strength of 1 in 100 has given complete and effective results.

ALBAROL will kill your scale pests, etc. White louse are completely eradicated by spraying with **ALBAROL**.

Codlin moth control.

Used with the standard control (Arsenate of Lead)

—**ALBAROL** kills codlin moth grubs.

Under the old regime, three to five sprayings with Arsenate of Lead were necessary every season. **ALBAROL** lessens the number of sprayings to two or three annually. The full value of this saving of labor and expense is well understood.

ALBAROL serves as a check to scale pests, etc. **ALBAROL** guarantees clean fruit. No "wiping" before packing is necessary.

REMEMBER THE STRENGTH, 1 in 100.
HARBAS RED SPRAYING OIL and HAROLA LIME SULPHUR SOLUTION.

We Are Also the Manufacturers of:—

INSECTO (Sulphate of Nicotine).

NATIONAL BORDEAUX POWDER.

"NOSCO" WEED KILLER.

RESIN and SODA WASH, Etc., Etc.

Sole Agents of Australia for Hemingway's English Arsenate of Lead (Paste and Powder).

Write for Literature concerning our Manufactures.

LANE'S LIMITED

ABERCROMBIE & LEVEY STREETS - - - SYDNEY

Agents Everywhere.



Don't Exaggerate the Fertility of Your Soil

How often do we see really poor soils, properly fertilised, returning bigger yields and better profits than others the fertility of which is supposed to be inexhaustible.

The profit's the real basis. The fertiliser expense becomes an investment, particularly when that expense has included some **SULPHATE OF AMMONIA**, for Sulphate of Ammonia has proved, over a number of years and on a variety of crops, a definite force in business-like farming and fruit growing.

Don't think that your soil can go on indefinitely without the application of some form of nitrogen. There's no better source of nitrogen supply than Sulphate of Ammonia—now available in a condition satisfactory to all fertiliser users—dry, free-running, and without lumps.

THE METROPOLITAN GAS COMPANY,
196 Flinders Street, Melbourne.

SA 7/28

Peach stocks comprise over 45,000, in addition to another batch of 16,000 seedlings for budding in February, 1929.

In Apple stocks, a large block of about 230,000 Northern Spy root grafts was noted. Other stocks included Mazzard Cherry and Plum-Mariana and Myrobolan.

The same meticulous care is displayed in the handling of the young trees as is shown in the growing. The firm has its own railway siding, and an area of land covering six acres, right at Bairnsdale railway station. Portion of this land is used for healing in trees prior to bundling in the packing shed which adjoins. A fine roomy shed, 80ft. x 40ft., is available for packing, and all trees are carefully handled. A special fruit tree packing machine is used for packing. A large interstate trade is carried on. The roots of trees for this and overseas trade are mulched before packing, thus ensuring the trees opening up at destination in a fresh condition. Although all trees are free from insect pests, a fumigator is installed here for use on trees which must be fumigated for some States to comply with the law.

The present proprietor, Mr. G. W. Peart, is well known throughout the nursery and orchard business, and all the work in the nursery is under his personal supervision. His help and advice is much sought after by all connected with the orchard industry, and much credit is due to him for his untiring efforts in supplying fruit trees which can be found giving good results all over Australia, New Zealand and elsewhere.

Mr. Peart is a prominent member of the Nurserymen and Seedsmen's Association of Victoria, and a past President.

Grubs and Eggs in Dried Fruit

are the terror of the fruitgrower, the grocer and the consumer. All dried fruits, nuts, etc., coming into Australia should be sterilised to kill all the grubs and eggs present. As all insect life and eggs

Can be Completely Eradicated

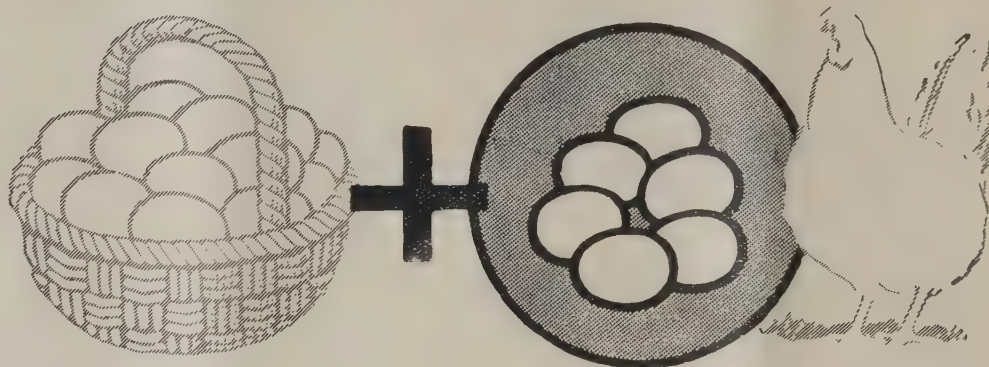
by the Hydro Vacuum process, Australian Dried Fruit could be so treated, and sent out in sealed containers to prevent re-infection. With such delightful, clean fruit, public confidence would be gained, resulting in mutual satisfaction and bigger trade. The old-time fumigating system has been rendered obsolete

By the Sterilizing Process

perfected in Victoria and patented through the Commonwealth. Strict tests under Government supervision prove that this process is absolutely satisfactory in the destruction of all insect life and eggs in dried fruits, nuts, grain, borers in timber, eelworm and bulbmite in bulbs. This effective system

Of the Hydro Vacuum Fumigation Co. Ltd.

is in operation at the Company's works, Ingles-street, Port Melbourne. The penetration of the lethal gases is complete, without opening cases or cartons. Further, the goods are in no way harmed. Full information is contained in a descriptive booklet obtainable free on request. This contains report of demonstration on September 4, before Federal and State Government officials.—Write for your copy now.
The Hydro Vacuum Fumigation Co. Ltd., officially registered as a Quarantine Station by the Plant Quarantine Department. Works: Ingles-street, Port Melbourne. Office: Temple Court, Collins Street, Melbourne, C.I. Phone: Central 2670.



Eggs while moulting

IS this true of your fowls? Do they even lay during the last weeks prior to breaking into moult? It is true of many backyarders' fowls. It can be true of yours. If they are not laying now, give them Karswood Poultry Spice (which contains dried and ground insects). Karswood is a natural food-tonic which supplies fowls with those tonic ingredients which they need so much, including assimilable phosphorous. Assimilable phosphorous is the one ingredient essential for the formation and growth of large-sized eggs. Karswood cannot force, it contains no chillies, gentian, cayenne pepper, etc., or other forcing ingredient, but brings about its results in a perfectly natural manner.

In addition it provides the hens with sufficient reserves of energy to enable them to go through a quick and easy moult and even keep on laying through the moult. Read what this man says of Karswood.

"Great Help to Fowls"

Dear Sirs,

I have used your Poultry Spice for some time and find it very satisfactory, especially during the winter months and it is a great help to the fowls while they are moulting, and I can honestly say more than half of them layed while going through the moult. All my fowls look healthy and vigorous, thanks to your Spice.

You are at liberty to use this letter as you please.

*Signed, D. BONNER
Vesper Street, Mount Gambier
South East, S.A.*

"Never without Eggs"

Dear Sir,

I am a backyarder, and I am never without eggs winter or summer, thanks to your wonderful Spice which keeps my birds in good health and laying condition.

*H. J. SEYMOUR
26 Hamilton Street, West Hobart
Tasmania*

Note the Economy

1/- packet supplies 20 hens 16 days; 2/- packet supplies 20 hens for 32 days; 13/- (7 lb. tin), supplies 140 hens for 32 days.

Supplies

Karswood Poultry Spice is obtainable at all wholesalers and stores at the following retail prices:— $\frac{1}{2}$ lb. packet, price 1/-; 1 lb. packet, price 2/-; 7 lb. tin, price 13/-; 14 lb. tin, price 25/-; 28 lb. tin, 48/-.

Karswood Poultry Spice

increases egg-production without forcing. It does not contain cayenne pepper or any forcing ingredient.

36/FP/28



POULTRY-KEEPING.

WATCH the appetites of your fowls, so that you will know exactly what quantity of food to give them.

If you decide to change the ration or method of feeding, do it gradually.

Keep the water supply to your fowls always fresh, and keep shell-grit where it is always within reach of the hens.

Keep feeding your pullets for all-round general health. One of the things that makes sturdy hens is oyster shell. Its chief value, of course, is in furnishing shell material to coat the eggs, but it is an important factor, too, in building strong-boned, large-framed chickens.

Feed the flock regularly, if you expect a full basket of eggs. Hens soon learn to expect the feed at a certain time each day.

Start keeping records of production and costs of the pullets just coming into laying, and study the past performances of the other egg-layers. The poultryman who keeps records is in a better position to locate the weak spots and eliminate them.

Developing the Pullets.

Pullets should now be placed in their winter quarters. Changing the young birds from house to house just when they are on the point of laying is only inviting the moulting process.

It is essential that pullets receive a plentiful supply of nourishing food, with green material in abundance. The meat ration should be given at regular times, say, about noon each day. When boiled meat is not available, and meat substitutes have to be fed, these can be supplied sparingly with the morning mash. They may also be provided in a separate receptacle and left for the birds to consume at their leisure.

When eggs are at a maximum price later on, pullets should be encouraged to give every egg they can, provided they are not unduly forced. Where pullets are showing signs of coming too rapidly to maturity, and promise to commence laying before they are sufficiently developed, to enable them to lay a decent-sized egg, forcing diet

such as meat should be cut out of the ration.

Points in Culling.

In a general way, the main culling of laying flocks should be attended to in the coming month. Efficient culling is one of the main secrets of successful poultry-keeping, and is one of the most difficult matters connected with poultry to teach the novice by printed matter. It is a work that can only be successfully carried out by a person with a cultivated eye for the laying type.

Moulting time affords one of the best guides to constitutional vigor and laying capacity. For a bird to give a high egg yield, she must necessarily be a long-season layer, and, obviously, to be a long-season layer she must be a late moulter, for it is only in exceptional cases that a bird will renew its feathers and at the same time continue laying. Thus, with birds hatched at the same time, and which have been subjected to similar treatment in all respects, the early moulter is the bird that should be culled.

In a mixed flock of first and second year layers, the second-year birds will usually, owing to their shorter season of production, moult later than those in their first pullet year. In such cases, where the moulting period is taken as a guide, due allowance for age must be made, otherwise many of the young birds which it would be profitable to keep are apt to be disposed of, and the older but less profitable birds left on the farm.

BEEKEEPING.

AMONG THE AUTUMN work to be attended to is the examination of the colonies for the purpose of ascertaining if each possesses a laying queen, and to note those that are too weak to survive the winter. In the negative in either case it is advisable to unite with a stronger colony so as to save the bees. On no account should an attempt be made to winter weak hives, as they are likely to get robbed out, and this may cause the bees to start robbing when everything in the apiary should be

quiet. A simple method of uniting may be practised by placing the weaker hive on top of a stronger one, and placing a sheet of newspaper between the two hive-bodies. In the course of a few days the bees of the weaker colony will make their way through the paper and unite peacefully with the bees in the stronger hive. The surplus combs may subsequently be removed and reserved for spring feeding if required. It is advantageous to destroy the queen in the weak hive prior to uniting.

LIME FOR ORCHARDS.

Fruitgrowers will be interested to know that unburnt screen lime is now available. This lime contains, as per analysis taken by the Department of Agriculture, 83.03 calcium carbonate.

Burnt slaked lime is also available. This contains, as per analysis, 92.9 calcium hydrate.

Deposits from which this lime is being obtained are now controlled solely by T. Curphy Pty. Ltd., of 344 Swan-street, Richmond, Vic.

It is claimed by the proprietors that this lime is up to the quality required for the orchardist, and much superior to that which was offered previously. Further particulars are announced in an advertisement which appears in this issue.

Don't Miss the Red Hill Show

Wednesday March 20
1929

Whitaker's Special Car Service leaving Batman Av. 9.30 a.m.

High Jump, Log Chop, Trot, Merry go-round, First Class Agricultural & Horticultural Exhibits.

Luncheon, Afternoon Tea, Soft Drinks and Ice Cream on the Ground.

Dance at Night in the Red Hill Hall.

First class Music, Floor, Prizes and Supper

Further Particulars and Schedule from Secretary

J. E. Holland,

Phone Red Hill South 3

Entries Close on March 18

Apple Stocks.

Tasmanian Experiences.

(By P. H. Thomas, Chief Horticulturist.)

Propagation.—In the early days of planting, the "seedling" stock was entirely employed for propagative purposes. From the records which are available, it is evident that certain varieties were favored for this purpose, selection being limited to those of known vigorous growth such as—Sturmer Pippin, Blue Pearmain, and French Crab.

These orchards now produce quite three-quarters of the annual crops, and to-day, there are many areas 50 and 60 years of age which are cultivated on a commercial basis, giving profitable returns to their owners.

One of the chief disabilities experienced with the "seedling" stock was its susceptibility to the subterranean form of woolly aphis (*Schizoneura lanigera*). This pest found a harbor in the roots of trees, and no practical means were available for its control. Where this occurred, the aerial form of infestation was considered more pronounced, and spray control measures more difficult owing to the continual re-infestation of limbs and branches from the roots.

Towards the end of the nineteenth

century, a number of experiments were devoted to obtaining an aphid resistant root stock, suitable for general propagative purposes. After testing numerous varieties, the "Northern Spy" was selected as possessing the desired requirements, and for a period of about twenty years the principal varieties were almost entirely raised on this "root stock," which was produced by ordinary methods of layering and root grafting.

About the year 1916, it was noticed that a number of the older orchards planted on this stock were not making satisfactory development, being stunted and unhealthy. This was so evident in 1918 that general concern was felt throughout the industry as to the commercial prospects of the orchards planted on this stock, and a Board of enquiry, composed of three practical orchardists, together with the State Horticultural Officer, was appointed to investigate the whole matter.

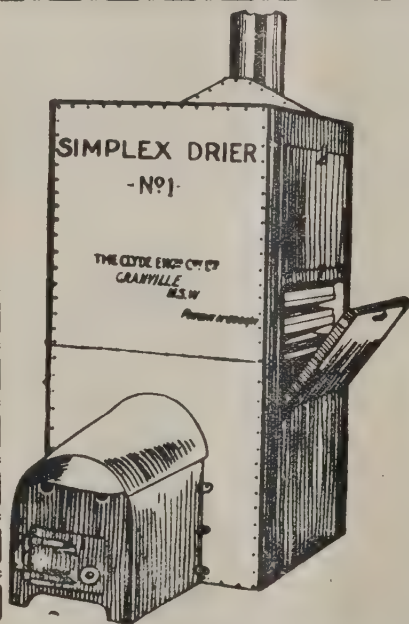
A number of comparisons were available of trees of the same variety, which were on both seedling and Northern Spy stocks, in some cases being in adjacent rows, and the Board ultimately were unanimously in favor of the former, although it was known to be more susceptible to the attacks of Aphid.

One of the chief disadvantages of a root stock that is propagated by cuttings, root grafts or layers is the lateral or surface development of the roots. This has been found to not only limit the feeding range, but also to often subject the main roots to bruising and even severance by cultural implements, the latter being conducive to a general unhealthy and stunted condition in the plant.

To-day, the choice of trees in Tasmania is almost entirely confined to those propagated on seedling root stock. The orchards planted with this class of tree, are generally found to be more productive, besides being less influenced by drought or excessive moisture.

Investigations are being conducted into the different types of seedling, with the object of obtaining an aphid resistant stock which may be raised by this method.

The results at present indicate that certain of the wild crab species are aphid resistant, and reproduce very true to type, being self fertile. Varieties which had been propagated upon these during recent years are generally making satisfactory growth and maintaining their root resistance to the pest, whilst the limbs and branches are often less affected than other adjacent trees on blight resistant root stock.



The Clyde Simplex Driers

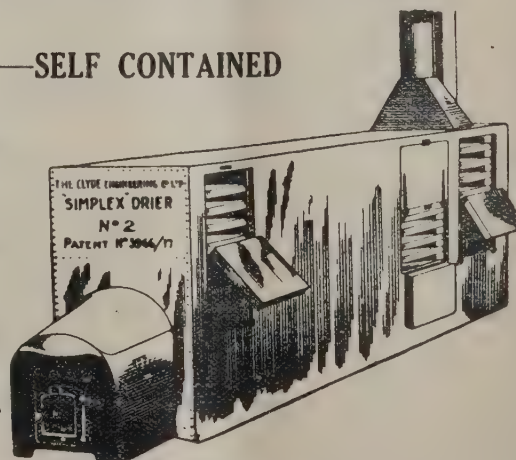
For Drying
Fruit, Vegetables and other Products

NO MORE WASTE FRUIT OR VEGETABLES

SIMPLE — SELF CONTAINED

Made in Sizes to suit

Householders
Small Orchardists
or
Large Factories



The Clyde Engineering Co. Ltd.
GRANVILLE, N.S.W.

SIX IMPLEMENTS IN ONE

Reversible to throw to or from the trees.

Made in various sizes. Send for particulars

ONE WAY DISC - SPRING TYNE CULTIVATOR
TWO WAY DISC - LIGHT 3 FURROW PLOUGH
CUTTING RAKE - IRRIGATION FURROWER

S I M P L E . T O O P E R A T E

L E A V E S T H E L A N D P E R F E C T L Y L E V E L



We Manufacture a Full Range of Special Tractor Orchard Implements

Write for Catalogue, stating either Tractor or Horse Drawn Implements

ORCHARD IMPLEMENT MAKER
BOX HILL, MELBOURNE, AUST.

D. HARVEY,

SHOW ROOMS, 440 ELIZABETH STREET, MELBOURNE.

AGENTS ALL STATES.

The Fruit Trade

Market Reports and News Items

REPRESENTATIVE FIRMS, FRUIT MERCHANTS, AGENTS, EXPORTERS, Advertising in this Journal.

NEW SOUTH WALES.

Sydney.

Chilton, F., City Fruit Markets.
Louey Pang & Samuel Wong Ltd.,
Thomas St., Haymarket.

VICTORIA.

Melbourne.

Andrew, Fred J., 416 Lit. Collins St.
Cave, F., & Co., Melbourne.
Davis, J., Western Market.
Dennys, Lascelles Ltd., Temple Court,
Melbourne.
Mills, A., & Sons, Western Markets.
Lister, G., Western Market.
Mills, J. B., & Co., Bank House, Bank
Place Melbourne.
Mumford, J. G., 449 Flinders Lane.
Pang & Co. Ltd., H. L., Little Bourke
Street.
Producers' Dist. Society, Western
Market.
Ross, J. W., Western Market.
Silbert, Sharp & Davies, Western
Markets.
Stott & Son, T., Western Markets.
Tim Young & Co. Pty. Ltd., Western
Market.
Vear, F. W., 49 William Street.
Wooll, G., Western Market.
Wholesale Fruit Merchants Assn., J.
D. Fraser, Temple Court, 428 Col-
lins St., Melbourne.

QUEENSLAND.

Brisbane.

Barr, A. S., Fruit Exchange.
F. B. Bolton
Collard & Mackay, Fruit Exchange.
Comino Bros. Ltd., Fruit Exchange.
Cooksley & Co., Fruit Exchange.
Geeves, H. V., Fruit Exchange.
Robsons Ltd., Fruit Exchange.
W. J. Whitten & Co., Fruit Exchange.

TASMANIA.

Hobart.

E. R. Cottler Pty. Ltd., 88 Collins St.
Jones & Co. Ltd., H., Fruit Exporters.
Peacock & Co. W. D., Fruit Exporters.
and at London.
Piesse & Co., C.

Lannceston.

Bender & Co. Pty. Ltd., 100 Elizabeth
Street.

NEW ZEALAND.

Dunedin.

Co-operative Fruitgrowers' of Otago
Ltd.

GREAT BRITAIN.

London.

Dennis & Cooper Ltd., Covent Garden.
Margetson & Co., Ltd., Covent Garden.
Monro, Geo., Ltd., Covent Garden.
Pask, Cornish & Smart, Covent Gar-
den.
Poupart, T. J., Covent Garden.
Ridley, Houlding & Co., Covent Gar-
den.
Swann & Co., 3 Salters Hall Court,
Spitalfields Market, E.1.

Hull.

White & Son Ltd.
The Port of Hull, London and N.E.
Railway. Rep., Major H. S. Cole,
c/o Burns, Philip and Co. Ltd., 7
Bridge St., Sydney.

Manchester.

The Port of Manchester, rep., W. J.
Wade, 8 Bridge Street, Sydney.

GERMANY.

Bremen.

Fruchthandel, Gesellschaft.

Hamburg.

Astheimer, P. H., & Son, Fruchthof.
Lutten, J. H., & Sohn, Hamburg.
Stier, Aug., Fruchthof, Repps. J. B.
Mills & Co., Bank House, Melbourne.
Timm & Gerstenkorn.

London (10/12/28).

Messrs. J. O. Sims, Boro' Market,
London, report having sold during
the first week of December, 6,000
cases of Gandia and Valencia Oranges
at prices ranging from 12/6 to 26/-.
Virginian Apples sold at 20/- to 27/-
per barrel. Messina Lemons sold at
10/- to 11/- per box. American Pears
sold at 14/6 to 16/6 box.

Victoria.

Melbourne (29/1/29).

Apples, 7/- to 12/- per case; Apri-
cots, 6/- to 9/-; Peaches, 8/- to 16/-;
Plums, 4/- to 6/-; Pears, 8/- to 10/-.
Other quotations were:—Bananas,
20/- to 26/-; Lemons, 12/- to 14/-, im-
ported 26/- to 30/-; Tomatoes, 12/-
to 18/-.

The Victorian Central Citrus Asso-
ciation reports as follows for to-day's
markets:—The demand for Valencia
Oranges was limited and prices were
unchanged. Increased prices were
obtained for the best counts of sound
Lemons. Sales were as follow:—
Valencias, 84's and under, 5/- to 8/-;
96's and up, 9/- to 12/-; a few higher;
Specials, to 15/-; Lemons, counts 160
to 225, to 14/-; others, from 5/-;
Bendigo Tomatoes, best to 14/-; Mil-
dura and district Grapes, Raisin des
Dames, 12/-; Sultanas, to 10/-.

South Australia.

Adelaide (19/1/29).

Apples, eating 8/- to 10/- per case,
cooking 8/-; Apricots, 10/-; Bananas,
Queensland, 32/- to 34/-; Grapes,
dark, 5/- per half-case; Lemons, 10/-
to 12/- per case; Melons, sweet, 4/-
per dozen; Melons, water, 24/- per
cwt.; Mulberries, 6d. per lb.; Nec-
tarines, 12/- per case; nuts, Almonds,
11/- per dozen lb.; Brazilnuts, 12/-;
peanuts, 11/-; walnuts, 12/-; Barce-
lona, 12/-; Oranges, common, 13/- per
case; navel, 14/-; Peaches, 8/- to
10/-; Pears, eating 10/- to 12/-, cook-
ing 8/-; Pineapples, 22/-; Plums,

light 5/-, dark 5/-, Japanese 6/-;
Strawberries, 12/- per dozen lb.

Western Australia.

Perth (18/1/29).

Producers' Markets Ltd. report
under date 18/1/29 as follows:—

Prices:—Valencias, dumps 14/- to
17/-, 3 bus. 10/- to 15/-, spec. to 19/3,
others from 8/6; Lemons, 3 bus. 10/-
to 17/-, spec. to 19/-, others from
8/6; Apples, 8/- to 12/-, spec. 15/9,
others from 4/-; Pears, 6/3 to 9/6,
others from 3/-; Peaches, 12/- to 18/-,
spec. to 21/-, others from 10/-; Apri-
cots, 10/6 to 17/-, spec. to 21/-, others
from 5/-; Nectarines, 12/6 to 20/6,
spec. to 25/-, others from 8/-; Passion
Fruit, 9/- to 11/-, spec. to 14/-,
others from 5/-; Tomatoes, 5/- to
9/6, spec. to 11/-, others from 2/-;
Plums, S. Rosa 15/- to 18/9, Satsuma
10/- to 14/6, others from 7/-, Bur-
bank 7/- to 11/6, spec. to 13/9, others
from 2/6, Climax 8/-; Prunes, 12/9
to 17/3, Shiro 7/- to 14/6, other
varieties 4/- to 14/-; Grapes, White
Chassias 2/6 to 8/-, Red Chassias
4/6 to 7/-; Currants, 2/- to 4/-;
closed lines, 2/- to 6/-; Strawberries,
12/6 to 20/3.

Queensland.

Brisbane (22/1/29).

Prices ruling for local fruit:—
Lemons, 6/- to 9/- a quarter case;
Peaches, 2/- to 5/-, specials to 6/-;
Plums, Pons 10/- to 12/-, Pres. 4/-
to 6/-, G.D. 5/- to 7/-, Kels. 5/- to
8/-, O.P. 5/- to 8/-, others 4/- to
6/-; Nectarines, 5/- to 8/-; Apples,
eating, Jon. 8/- to 10/- a bushel case;
Grav., specials 10/-, others 7/- to
9/-; cooking, M.F. and F.C. 5/- to
6/6, G.S. 9/- to 10/-; Pears, W. 8/-
to 10/-, Caps. 5/- to 7/-; Pineapples,
rough 4/- to 8/-, smooth 10/- to 12/-
and 4/- to 6/-; Passion Fruit, 3/- to
6/- a quarter-case; Grapes, black 3d.
to 5d. a lb., Roma Muscatels 5d. to
7d., Waltham Cross 6d., white 6d.;
Watermelons, 1/- to 20/- a dozen;
Rockmelons, 1/- to 9/-.

Imported fruit:—Lemons, Italian, 27/- a bushel
case, South Australian 18/-, Cali-
fornian, 42/- a double case; Oranges,
New South Wales 8/- to 14/- a bushel
case; Pears, Victorian W. 11/- to 12/-.

New South Wales.

Sydney (29/1/29).

Apples, local, dessert, extra choice
16/- to 18/- per bushel case, choice
12/- to 14/-, medium 6/- to 9/-, small
3/- to 4/-; cooking, choice 11/-, me-
dium 7/- to 9/-, small 3/- to 4/-;
jam, 2/6; Apricots, Tasmanian 5/- to
6/- per half-case, Victorian, ripe 6/-
to 10/- bushel case; Bananas (genuine
grades), extra special 22/- to 24/-,
special 18/- to 20/-, choice 12/- to
16/-, standard 8/- to 10/- per case;
Black Currants, Tasmanian, 5/- to 6/-
per 12lb. box. Citrus Fruits.—Lemons,

local, colored, extra choice 16/- per bushel case, choice 12/- to 14/-, medium 8/- to 10/-, small 5/- to 7/-; Victorian, 10/- to 16/-; Italian, 23/-; Oranges, Valencias, extra choice 10/-, choice 7/- to 8/-, medium 5/- to 6/-, small 3/- to 4/-; Cucumbers, 1/- to 4/- per half-case; Figs, common 3/- to 5/-, dark 4/- to 6/- per quarter-bushel case; Grapes, white 6/- to 10/-, Black Hamburgs 8/- to 10/-, Muscats 7/- to 14/- per half-case; Nectarines, 4/- to 10/-, irrigation area 6/- to 10/- per half-case, Victorian 7/- to 12/- per bushel case; Passion-fruit, choice 14/- to 16/-, medium 9/- to 12/-, inferior 4/- to 6/- per half-case; Pawpaws, 8/- to 16/-, choice to 21/- per case; Peaches, extra choice 7/-, choice 5/- to 6/-, medium 4/-, small 2/6 to 3/- per half-case; irrigation area 4/- to 6/- per half-case, Victorian 6/- to 8/- per bushel case; Pears, local, Williams, choice colored to 7/-, green to 6/-; irrigation area, Williams 8/-, China 4/- to 6/-; Victorian, Williams 5/- to 7/- per bushel case; Pineapples, Queens 10/- to 15/-, Ripleys 8/- to 12/- per case; Plums, light 2/- to 4/-, dark 4/- to 6/-, special 7/-, red 2/- to 6/- per half-case, jam 4/- per bushel case; Victorian, Angelinas 7/- to 12/- per bushel case; Prunes, Victorian, 6/- to 7/- per bushel case.

New Zealand.

Dunedin (17/1/29).

Reilly's Central Produce Mart report as follows:—Large consignments of fruit arriving daily. Rasps lower in price than we ever remember. Unfortunately, a quantity arrived black and in hopeless condition other than for vinegar purposes. Peaches ridiculously cheap. Tomatoes meet a keener enquiry.

Apricots, cases 3/- to 6/6, crates 3d. to 5½d.; Nectarines, cases 4/- to 6/6, crates 3d. to 6½d.; Peaches, cases 2/- to 4/6, crates 1½d. to 4½d.; Cherry Plums, 1½d. to 2½d.; cooking Plums, cases 2/- to 4/-; dessert Plums, crates 3d. to 5d.; Currants, red 4d. to 5d., black 5d. to 8d.; Raspberries, 5d. to 8d., black, inferior 2d. to 4d.; Loganberries, 5d. to 7d.; Christchurch Tomatoes, 9d. to 1/1, seconds 5d. to 8d., locals 10½d. to 1/2; new season's Apples, dessert 3d. to 6d.; Honey and Jargonelle Pears, 3d. to 5d.; Gooseberries, choice 2d. to 3d.; Grapes, 1/9 to 2/2; Strawberries, choice 1/- to 1/5, jam 8d. to 1/-; Lemons, Missions, 47/6; Oranges, navels, Sunkist, 45/-; Grape-fruit, 36/-.

LIGHT APPLE SHIPMENTS FOR 1929.

Only about 750,000 cases of Apples will be available for export from Tas-

mania to England this season, says Major H. Dakin, Australian agent for Messrs. Geo. Monro Ltd. The failure of the Apple crop is even more pronounced in Victoria, where a very small quantity will be available for the English markets. Mr. Dakin has just concluded a tour of the fruit-growing areas of Victoria and Tasmania.

"VOLCK" SPRAY APPRECIATED.

Tasmanian Experience.

Warm appreciation of the new Californian spray, "Volck," is expressed by Mr. Frank Walker, nurseryman and fruitgrower, of Launceston, Tasmania, who states that from one spraying the white scale on Kentia Palms was cleaned up, with no injury to the most tender growths, and after spraying the plants have a fine fresh appearance. "Volck," in Mr. Walker's opinion, will do away with fumigation for getting rid of the scale.

The New South Wales agents are the Australian Fruit and Produce Co. Ltd., Fruit Exchange, Sydney. The agents in the other States are as follows:—Victoria, Pannifex & Co., 26 Market-street, Melbourne; Queensland, Australian Fruit & Produce Co. Ltd., Turbot-street Markets, Brisbane; Australian Co-op. Fertilisers Ltd., Little Roma-street, Brisbane; Tasmania, W. H. Ikin & Son, Hobart; S. Australia, Silbert, Sharp & Bishop Ltd., Adelaide; W. Australia, Paterson & Co., Perth.

SMITHFIELD MARKET, MANCHESTER.

In the September issue of the "Fruit World," Captain W. J. Wade, representative for the Port of Manchester, drew attention to a paragraph, re Spitalfields Market, London, and claimed that the Smithfield Market, Manchester, was fully provided with a series of internal roads. Captain Wade's letter is commented on in the "Manchester Guardian Commercial," and this was followed up by a notice in the journal, "British Australia," of November 1 last.

"The Manchester Guardian Commercial" also draws attention to a mistake published in Sydney in regard to the London meat facilities. While admitting that 70 per cent. of the meat imported into England is landed in London, it is denied that 70 per cent. is handled there. "The Commercial" states that only 34 per cent. is handled in London.

Further comments are as follows:

"Ignorance on the part of Englishmen of Australia is a common and not unjustified complaint. The formula 'What Manchester thinks to-day English will think to-morrow,' provides no solution to the question: 'When will Australia pay to Manchester what Manchester thinks is her due?'"

CASE-MAKING MACHINES.

The manufacture of packing cases and parts thereof for trade requirements has risen from the scope of the artisan working in a small way to an important branch of the wood-working industry. In place of the workman nailing his boxes individually by hand only, machines designed for this purpose turn out parts as well as whole boxes ready finished. These machines will give an output of 5 to 20 times that of a skilled worker (according to the size of the machine), and, furthermore, they can be operated by unskilled labor. These machines do their work with unfailing accuracy, and the nails can be driven into the case at an angle if so desired, which has the advantage of fastening the boards more securely.

This method of nailing is called staggered nailing. Further, these machines are also supplied with a riveting device which turns the nail back into the wood perfectly before it projects into the inner side of the case, that is, it is necessary to nail on battens. The nail is securely rivetted, but is not bent over on the inner surface of the case, therefore, the surface is not affected by projecting nails, which would damage the fruit and perhaps injure the packers.

A machine very quickly pays for itself by the lowering of the costs of making the case up from the shook. The attention of readers is directed to the advertisement on page — of this issue, which refers to the nailing machines as manufactured by Messrs. Bohm & Kruse. Further information in regard to the machines manufactured by Messrs. Bohm & Kruse will be gladly given by the distributors' agents.

FIRE AT GONN CROSSING.

Citrus Grower's Loss.

On January 29 a fire occurred at the home of Mr. W. H. Jackson, of Murrabit, Gonn Crossing, Vic. The fire occurred in the early morning, but, despite the most strenuous efforts, the loss was a total one. Sympathy is extended to Mr. Jackson in this misfortune.

"VOLCK"

WHITE OIL EMULSION

THE NEW QUICK BREAKING OIL SPRAY FOR
CITRUS AND DECIDUOUS FRUIT TREES

"VOLCK" is a patented oil spray.

"VOLCK" is manufactured by the California Spray Chemical Co., at Watsonville, California, U.S.A., by a highly-trained staff of CHEMISTS and ENTOMOLOGISTS, and is the result of many years study of the action of SPRAY OIL from the insecticidal and toxic standpoint on scale and insects affecting citrus and other fruit trees.

"VOLCK" DOES NOT BURN THE FOLIAGE.

"VOLCK" CAN BE USED DURING ANY WEATHER TEMPERATURE.

"VOLCK" does not require the addition of any soaps or other emulsifying agents.

"VOLCK" is a perfect emulsion which mixes readily with water and remains emulsified without forming any globules of free oil.

"VOLCK" will kill every Black and Brown Scale it hits, and is more effective than any other known Oil Emulsion for the destruction of Red Scale.

"VOLCK" will control RED SPIDER. Kills this Pest in all stages: Eggs, Young and Adult Spiders.

"VOLCK" kills CODLIN MOTH Eggs, young Worms, and also prevents stings.

"VOLCK" is used at 2 PER CENT. strength.

"VOLCK" MAY NOT BE AS CHEAP as other oil emulsions, but it is more effective, and is absolutely safe for any grower to use under any weather conditions.

Write for literature regarding VOLCK.

AGENTS:

VICTORIA:

H. C. PANNIFEX & CO.,
26 Market Street, Melbourne.
Telephone: 7375, 7376.

SYDNEY: Australian Fruit & Produce Co. Ltd.,
Fruit Exchange.

NEWCASTLE: Australian Fruit & Produce Co.
Ltd., Steel Street.

BRISBANE: Australian Fruit & Produce Co.
Ltd., Turbot Street Markets.

BRISBANE: Australian Co-op. Fertilisers Ltd.,
Little Roma Street.

TASMANIA: W. H. Ikin & Son, Hobart.

S. AUSTRALIA: Silbert, Sharp & Bishop Ltd.,
Adelaide.

W. AUSTRALIA: Patterson & Co., Perth.

Fighting Insect Pests in the Garden

Woolly Aphis.

Woolly aphis is very bad in some orchards at the present time, and it is advisable to spray at once with nicotine sulphate and red oil. To prepare sufficient mixture to treat 100 trees, 1lb. soap should be boiled in a gallon of water till dissolved; add 1 gallon of red oil, and mix thoroughly; then add 1 pint of nicotine sulphate, and after mixing the whole for a few minutes, add 80 gallons of water. If the water is hard, a small piece of washing soda should be added.

The Painted Apple Moth.

The caterpillars of this moth are from an inch to an inch and a quarter in length when fully grown, and densely covered with hairs. On the middle of the back are four dense upright tufts of rather short hairs. They are one of the worst fruit pests in Victoria, and are particularly destructive to fruit spurs of Apple, Pear, and other fruit trees. Spray with arsenate of lead, 1 in 25.

Woolly Aphis.

Woolly Aphis Parasites.

The woolly aphis parasite is very active this season. Continue putting out parasites in the orchard. These are obtainable from the Department of Agriculture, Melbourne.

Light-brown Apple Moth.

The active green caterpillars of this moth are very plentiful on Apple and other trees during the summer months, and cause a fair amount of damage to the young Apples, especially to the Yates variety. Spray with arsenate of lead, 1 in 25.

Looper Caterpillars.

These destructive caterpillars are more numerous than usual at the present time. They cause much damage by biting small pieces out of Apples and other fruits, causing depressions in the fruit, which makes them unsightly. Spray same as for light-brown Apple moth.

Bryobia Mite and Red Spider (Mite).

During the hot weather these very destructive mites are to be found on the underside of Apple and other leaves. When these pests are present they suck up the sap from the leaves, causing them to turn yellow and drop off. Thoroughly spray the underside of the leaves with nicotine sulphate or black-leaf 40. Benzole emulsion is also a useful spray. Burn all fallen leaves.

Rutherglen Bug.

These are small grey plant bugs which appear in countless numbers during the hot weather. They prick the fruit with their sharp tubular mouths, causing it to become spotted, and finally fall to the ground. They do much damage to Grapes, Peaches, Apricots and many other kinds of fruit, also to vegetables, etc. Use phenyle, benzole emulsion or tobacco sprays.

Shining Cockchafer Beetle.

These large beetles sometimes appear in such numbers in Apple orchards, particularly in Gippsland, that they do a great deal of damage to the foliage of the trees, in some orchards every leaf is eaten off the trees and the fruit spurs also destroyed. Spray with arsenate of lead.

Codlin Moth.

See "The Fruit World," December 1, 1928, p. 492.

Black Aphids of Citrus Trees.

See "The Fruit World," December 1, 1928, p. 492.

Pear and Cherry Slug.

The greenish slimy caterpillars of the Pear and Cherry slug are still to be found on Cherry and other trees. Continue spraying with arsenate of lead, 1 in 20. Dusting trees with soot, lime, or ashes will destroy these pests.

Painted Apple Moth.

See "The Fruit World," January 1, 1929, p. 38.

Fruit Drying.**How to Dry Apricots.**

As a method of dealing with fruit of almost any kind, drying is receiving perhaps more attention each year. Numbers of inquiries reach the N.S.W. Department of Agriculture from time to time, which suggests that a good deal of fruit will be treated in this way in the future, and, provided reasonable care is exercised, there is no reason why advantage should not be taken of a process that is really inexpensive, to turn to profit any fruit that may not prove suitable for marketing for any other purpose.

If a first-class product is desired, Apricots intended for drying must be allowed to remain upon the tree until fully ripe, but not overripe. As it is necessary to pick this fairly soft fruit carefully, it will be essential to go over the trees several times, because—it hardly seems necessary to mention this point—the fruit does not all reach the proper stage of ripeness at the same time.

Although the Apricot splits easily, it should be cut, not pulled, in halves,

and it should then be placed in trays with the cup-side upwards, the pits, of course, first having been removed. Each tray is placed in the fumigator with as little delay as possible, and is allowed to remain there until the fumigator is sufficiently full to start the sulphur burning. This is of great importance, because once the fruit has been halved it must not be exposed to sun or wind, otherwise such exposure will detract from its appearance.

Sulphur at the rate of 1 lb. to 200 cubic feet of room space should be placed in the burner. The fruit should be allowed to remain in the fumigator from eight to ten or twelve hours, or until the cup is full of juice. The trays of fruit should then be carried from the fumigator to the drying ground, which must be available if the sun is the only or principal drying agent.

The ground should be laid out and utilised in such a manner that the fruit may be carried on trucks to any part of it, and it should be kept as free from dust as possible. The dust nuisance may be minimised by leaving no tracks or spaces between the trays.

There are then only outside trays to be watched, and borders and paths (if any) can be sprinkled with water.

The bulletin on "Fruit Drying" issued by the N.S.W. Department of Agriculture, and obtainable either from that Department, or from the Government Printer, Sydney, for the small charge of 10d. (posted), will to have further details on the sub-prove of value to growers who wish to see. This bulletin deals with plant and equipment necessary for drying, as well as treating with the drying of many different fruits.

NOT KEEN FOR CHAMPIONSHIP.

Higgins' wife had just presented him with triplets, three bouncing boys, and his employer congratulated him heartily on the event. The following day he was called into the office and handed a silver cup in recognition of the triple blessing he had bestowed upon his country. Higgins received the gift in a rather embarrassed manner, and turning to his employer, he said:

"Thank you very much, sir. But—er—is this cup mine now, or do I have to win it three years in succession?"

DENNIS & COOPER LTD.

Covent Garden, London, England

FRUIT BROKERS & COMMISSION SALESMEN

Financial Facilities Offered

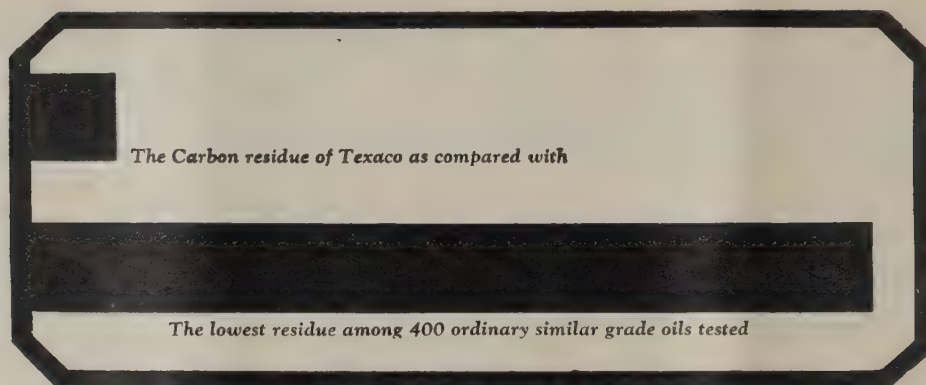
APPLE and PEAR SPECIALISTS

MAKE YOUR SHIPMENTS THROUGH

Messrs. S. J. Perry & Co. 364 LITTLE COLLINS ST.
MELBOURNE

Phone: Cent. 3480

Who will give all information

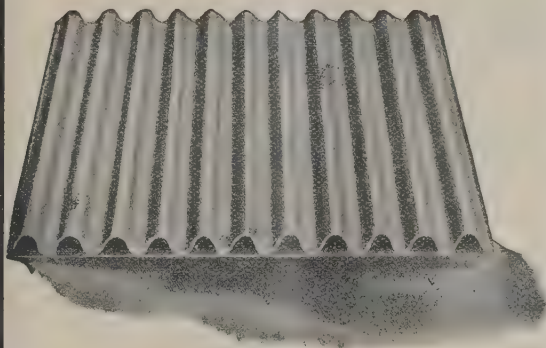


A recent accurate and authoritative test of 400 well-known Motor Oils proved that TEXACO has a carbon residue less than one-tenth that of the lowest analysed.

The Carbon Residue of Texaco is less than one-tenth that of Ordinary Motor Oil

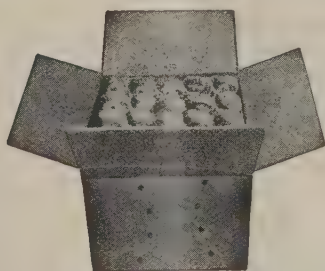
Here is a statement, the truth of which you can either verify yourself or see demonstrated at any office of the Texas Company—there is one in every State. Watch the oil in your own car tested by the hot plate method. Just a metal plate heated to about 800 deg. Fahrenheit, then a drop of oil allowed to fall on the plate. The oil is at once burned away leaving—if it is ordinary oil, a black blot of carbon, but if it is Texaco—a mere smudge on the polished surface. Could anything be more convincing?

TEXACO



Corrugated Strawboard Liners for Fruit Cases

A Safe Insurance Against
BRUISED FRUIT



CORRUGATED CASES
SUITABLE FOR FRUIT PACKING

Full particulars on application to

J. Fielding & Co. Ltd.
Buckingham and Chalmers Sts.
SYDNEY, N.S.W.

3 Workers for You!



Earth Augers

When post holes are to be made for fences, sheds, etc., get the tool designed especially for the job and cut out the laborious, time-wasting, old-fashioned method.

One of the handiest tools out for the man on the land. Only necessary to lean on it and turn it to the right. The result is a speedy job, and clean cut holes. Ramming is reduced to a minimum. Although very strong, the Seymour is not clumsy or heavy.

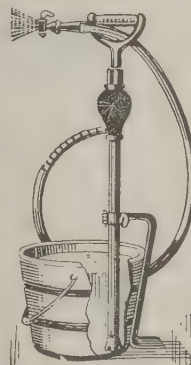
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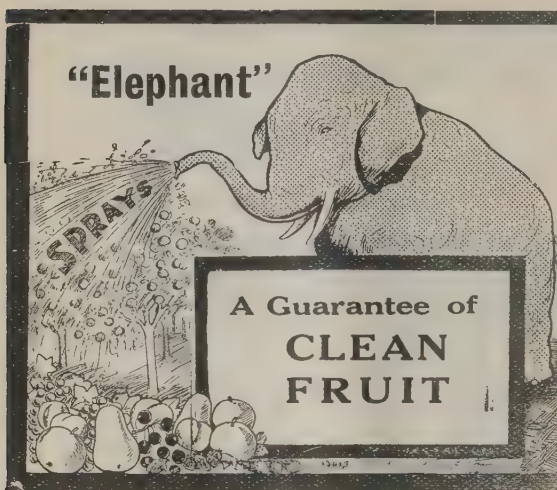
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EMPIRE TRADE.

The London "Chamber of Commerce Journal," recently commenting upon Empire reciprocal trade, stated:

"As some evidence of what can be accomplished by the Dominions in securing a much larger share of the United Kingdom market, it may be mentioned that during last year supplies of wine from Australia and South Africa considerably more than doubled, that that the Commonwealth is now well ahead of France and bids fair within a year or two to equal the trade of Portugal, our largest source of supply. In the raisin market, Australia also more than doubled her trade within twelve months, while in the supply of tobacco growers in Nyasaland were able to find in this country a market for nearly 5,000,000 lb. more than the quantity they supplied in 1926. New Zealand continues to increase her share in regard to butter supplies, and is progressing at a greater rate than Denmark, which country for years has occupied the predominant position. In regard to cheese, a further advance in the New Zealand product last year now enables that country to market more than half the total imports of cheese into the United Kingdom.

American Conditions as Seen by a New Zealander

Pruning, Picking, Dusting, Spraying, Organization. Some Practical Suggestions for Australia and N.Z.

(By L. C. Tonkin, Ettrick, Otago, N.Z.)

DURING the winter of 1928 I had the opportunity to re-visit the Apple-growing districts of North-West America. My first visit at the age of 21 was spent in the Apple-packing "houses," which has stood me in good stead, for New Zealand some seven years ago adopted the American grades completely. This recent visit (nine years later) was made with maturer knowledge; and, as I mentioned to your editor that he was travelling a few weeks ahead of myself while in America, he asked me to give my views on certain subjects which may assist growers on this side of the equator.

The N.W. of America is a young country in the sense that N.Z. and Australia are young, and the conditions there are well described by the "Better Fruit" magazine, while the Eastern States of America (which are much older) are catered for by the "American Fruitgrower" magazine. Why the N.W. States are so useful to a visitor from our southern lands is because those States, Oregon and Washington, are the leaders in the boxed Apple districts, growing large fruit which are well graded and packed attractively.

Pruning.

In the first place, the size of the American trees is large, because of the wonderful depth of suitable soil which is adapted to the seedling stock. Because these trees pick 20 cases or over per tree, with 800 to 1,000 bushels to the acre, naturally pruning operations are totally different, but a few lessons can be learnt. For instance, they space, by thinning, their Apples so that each fruit is, say, five inches apart. If we adopt this thinning we find that our trees on dwarf stock will make so much more annual growth that a much bigger tree will result as the years go by until the time will come when American trees will touch one another—even at 40 feet apart they are overcrowding one another now in the Cashmere district—while our trees will gradually grow bigger and bigger.

Thus the apparent lack of American pruning is made up by their thinning, and we can by adopting their thinning increase the size of our trees, and incidentally the quantity

and quality of our fruit will be increased; while the capacity of the tree to bear good crops annually as against a big and then a light year will be improved.

Australians will notice that New Zealand export has remained fairly consistent the last few years, and that is probably as much the result of thinning in progressive Nelson—where most of the export fruit is grown—as the bold manuring programme now adopted.

Picking.

Instead of the usual canvas picking bags, buckets are being used by some of the larger growers, but this again is probably a result of the high trees. However, I used a dozen in my orchard, and find them suitable, though they do not hold a bushel, and it is necessary to level off the cases which would be an objection if it were not for the fact that in a large commercial orchard with a gang of pickers the levelling-off can be done by the boss or foreman giving a very good check over each individual picker as to stem punctures, bruises, stems pulled out, and other defects that reject fruit under our export standards.

Thus we find the buckets quite an improvement in a large orchard, especially with ladder work, as most pickers have the tendency to swing their ordinary canvas picking bags against the sides of their ladders, with consequent bruising. Incidentally, our New Zealand export grades now permit Apples with codlin stings to be exported, which has been the custom always in American grades.

Dusting for Pest Control.

This as a method of pest control seems good, but because the tendency is towards stationary plants, dusting has never been universally adopted. Out here large supplies of the necessary spray powders would not be readily available, and, judging by the fact that we grow more shelter belts (because of more wind), then probably our climatic conditions are too windy for dusting. It should, however, suit our dwarf trees ("dwarf" seems a depreciative word), or rather our smaller, compact trees—especially for codlin control. Thus, while dusting seems so suitable on account of the compactness of our Australian and New Zealand trees, it is evident

that the doubt of readily obtaining the powder supplies, together with the recent adoption of stationary plants, has caused growers to continue using liquid sprays.

Stationary Spray Plants.

The following are probably the reasons why North-Western U.S.A. growers adopted this method of spraying:—(1) There are usually three small irrigation furrows running through the cover crop (usually lucerne), and these furrows get sun-hardened, which must have made rough going for the spray outfit; (2) water is so handy, being obtained from irrigation ditches; (3) an individual grower can spray away on his own; (4) less damage to their overhanging crops.

Nelson, New Zealand, has adopted this spraying method because of its wet springs, the steepness of some of its orchard lands, lack of land suitable for growing horse-feed, making a tractor advisable, with the consequent use of no horses at all, the permitting of the orchard-owner to apply timely sprays for the ever-present menace—in that district—of black spot. Hawkes Bay, N.Z., and Canterbury have also adopted the method because it is most suitable for any reasonably sized orchard of large trees of payable varieties planted in good ground.

Apple-Washing Machines.

Because the wiping machines (which consisted of a multitude of flaps of cloth attached to rollers driven by an electric motor) proved not efficient enough in removing the arsenic left on the Apples at picking time, washing machines had to be constructed. They have been in operation two seasons now, and are evidently proving successful, as 90 per cent. of the 1927 crop was so cleaned. Strangely enough, the cost per box is very low, and it is even suggested that the increased attractiveness of the cleaned Apple, together with the time saved by easier grading, has made the washing of Apples and Pears a commercial gain to the grower. One thing can be said, and that is that the American grower, up against a very serious crisis when his fruit was liable to be rejected on account of too much arsenic, proved his individuality, energy and inventive-

ness in planning a washing machine—an idea that probably would have been laughed at five years ago.

This application of brain to a fruit industry is strikingly shown in the way each "Sunkist" Orange is stamped with the word Sunkist. This is done by a rubber stamp, which, being electrically heated, "fire"-brands (as it were) "Sunkist" on the Orange hide. This last Australian metaphor reminds one that the word "ranch" in America is used for very small-sized orchards and farms. Indeed, the five-acre orchard of John Smith would be listed in the telephone directory as the John Smith Ranch.

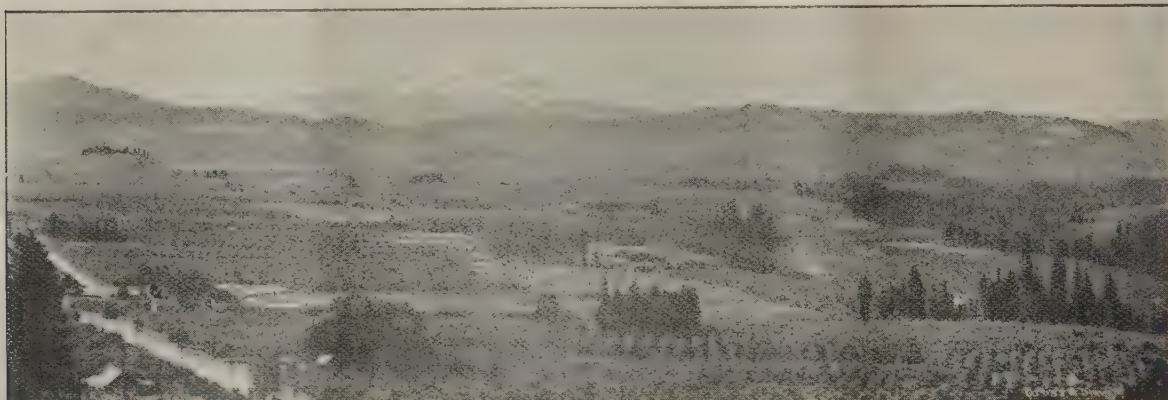
On account of most of the fruit lands being irrigated, a cover of alfalfa or lucerne is grown under the trees all summer, but is not cut. Sweet clover is also used, but it was mentioned that a yellow sweet clover was

each driving a part of the shed equipment; perhaps a Sunkist brander, perhaps an empty case elevator, a case-making machine, a wire-tying machine, or an automatic lid-nailer.

A good packing stand was noticed which obviates the lifting of the heavy Orange box from the grader to the conveyor line. The box being packed rests at an angle on iron rollers, and when filled the box can be lifted by a foot ratchet to a level position, the whole stand (being on castors) wheeled a few feet from grader to conveyor line, and the heavy box pushed (the few iron rollers on the packing stand helping this operation) on to the conveyor line.

fuls of soil in the form of a mound, and the surface is carefully packed with a shovel. A gas is given off by the crystals which kills the insects. It is inadvisable to use this method with very young trees, however.

About four weeks after the treatment the mounds of soil should be torn down to permit the confined gas to escape, in the case of four and five year old trees. Six-year-old trees may be left six weeks. It is reported that the best results with paradichlorobenzene are obtained in the autumn after the Peach borer moths have finished laying their eggs, and most of these have hatched. At that time the borers are small and more easily killed by the gas.



The Famous Hood River Apple-growing district, near Portland, Oregon, U.S.A. Note Mt. Hood in the background.

also going to prove very successful as a soil improver.

The surrounding country is very bare with sage bushes and dried-up grass, and we can almost sympathise with the Red Indian who once roamed where there are now Apple valleys. We were lucky enough to see a parade of these Indians on horseback, and their colorful costumes and wiry ponies brought back the days when they were strong competitors to the aboriginals and Maoris in our boyhood reading.

Indeed, the impression received of the whole Pacific coast of the United States is one of dryness, and even the homes of the movie stars are built in places not so attractive as those where an Enzedder or Aussie can pitch his motor camp or his weekend crib.

The Californian Apple districts are now considered usually of relatively great importance, but the Orange packing houses are very efficient—as many as 22 motors being in one shed,

TREATMENT OF PEACH BORER.

Paradichlorobenzene treatment is recommended by the U.S. Department of Agriculture as a control measure against the Peach borer, which is one of the most serious insect pests that infest Peach orchards.

Each year this insect causes, directly or indirectly, the death of many Peach trees in both home and commercial orchards throughout the Southern States of America. Peach trees of all ages are attacked. Young trees are sometimes completely girdled, and older ones severely injured, by the larvae feeding on cambium or growing tissues of the trunk just below the surface of the soil. The larger roots are also sometimes subject to borer attacks.

Crystals of paradichlorobenzene of about the fineness of granulated sugar are spread in a ring around the base of the trunk of trees four years of age or older. This ring should be about 1½ inches from the tree. It is then covered with several shovel-

MORE FRUIT FOR EUROPE.

Chile Now Competes With Australia, New Zealand and South Africa.

Chilean fruits are now established on the London market, and another competitor is added to the already formidable list of fruit exporting countries that are fighting for a place on the markets of the United Kingdom and Europe.

Chile produces Apples and Pears in the south, Peaches, Apricots, Tomatoes and Plums in her central territory, and Figs, Grapes and Oranges in the north, and in the Pica Valley.

A Chilean Government official supervised the sale of fruit shipments to London, and then visited the Continental cities, where arrangements with merchants for the sale of the fruits of Chile was completed.

Chilean fruit are on the British market at the same time as fruit from Australia, New Zealand and South Africa.

Tasmania will Fight the New Grading Regulations.

Island State Not Represented at Vital Conference.

Deletion of Plain Grade Not Acceptable to Tasmania.

(By Our Correspondent.)

TASMANIA is up in arms against the new grading regulations for the export of Apples and Pears.

The State Fruit Advisory Board—an effective organisation which speaks for the State's fruit industry, was not represented at the vital conference which decided the regulations, —and Tasmania supplies two-thirds of the fruit despatched. The Board will take all steps necessary to prevent the new regulations from being enforced.

At the Fruit Advisory Board meeting, the chair was occupied by Mr. B. J. Pearsall, M.H.A., and there were also present Hon. W. H. Calvert, M.L.C., and Messrs. J. P. Piggott, M.H.A., V. J. Skinner, F. H. Peacock, G. McGowan, T. J. Eddington, A. Davies, O. J. Morrisby, and the Secretary (Mr. P. H. Thomas).

A letter was read from the Premier (Hon. J. C. McPhee), quoting a letter from the Prime Minister. This letter recounted the calling of the conference of State Export Supervising Officers: in view of competition from other countries, it was deemed advisable to revise the Australian fruit export grading regulations; ample time was allowed for growers to prepare for the new standards, and it was proposed that from January 1, 1931, the "plain" grade should be deleted. The remaining grades were known as "special" and "standard," and were grades more in keeping with the grades enforced by the competing countries. The elimination of the "plain" grade should remove all grounds for complaint in regard to the quality and grading of Australian Apples and Pears. From the same date, it was proposed to prohibit the exportation of those varieties of Apples considered unsuitable for the overseas trade, and for which unpayable prices were invariably obtained.

Continuing, the Prime Minister's letter stated that a serious disability had been brought under notice from time to time, viz.: the

lack of uniformity

in Apple cases for export. Existing regulations included no less than seven different sizes. Strong representations had been made with a view to exporters adopting a recognised

standard export case for Australian Apples. The High Commissioner's Office in London had made inquiries at the close of the 1928 season in order to ascertain the type of case mostly favored by the trade in Great Britain, and in his report the official secretary had stated that the National Federation of Fruit and Potato Trades Association, and the majority of individual importers, favored the Australian bushel case (internal measurements, 18 in. x 14½ in. x 8-2/3 in.), mainly on the ground of its distinctive appearance, and the fact that with the new season's fruit coming on to the market the Australian bushel case was immediately distinguishable from the American package. In Australia, however, there was a diversity of opinion on the case considered most suitable for overseas requirements.

The Supervisor of Exports (Mr. H. G. Dyer), wrote stating that from January 1, 1930, Regulations 47b was to be amended to make it compulsory for the ends of cases to be smoothly dressed. From January 1, 1931, Regulation 61 was to be amended to provide for the inclusion in the trade description of the number of fruit contained in a case, in place of the optional use of the size or number of the fruit. The inclusion in the trade description of the size and number would be optional during the 1929 and 1930 seasons.

The regulations were to be further amended, stated Mr. Dyer, as from January 1, 1931, to provide that the export of the following varieties of Apples should be prohibited: Alexander, Allington Pippin, Crow's Egg, Golden Pippin, James Grieve, Mobb's Codling, Prince Alfred, Peasgood Nonsuch, Winter Majetin, Hoover, Shockley, and Trivett.

Vigorous Opposition.

The chairman said that Tasmania would have to fight for her rights. Tasmanian growers depended almost solely on the export trade to interstate and overseas markets. At the vital conference, Tasmania should have been represented by men who were vitally interested in the fruit-growing industry. If the "plain" grade were eliminated from export, it would throw great quantities on to the local market, and these could

not be disposed of. The "plain" grade varied very little from the "standard" grade, and the quality was hardly impaired. Regarding the varieties of fruit that it was intended to prohibit, there were some mentioned that had a ready sale on the overseas markets, and the growers knew what not to send, for they found out what were the best sellers. The treatment received was disgraceful, and he considered that a strong protest should be entered.

Mr. Davies said that Senator Ogden, after hearing a deputation from the Board, had promised to bring the matter under the notice of the Federal Minister concerned. So far no advice of Senator Ogden's action had been received. If direct representation failed, redress would have to be obtained in another way.

"Red Tape Coterie."

Mr. J. P. Piggott, M.H.A., said that a coterie of red tape experts could not run the fruit industry. Tasmania did not want to send inferior fruit. The "plain" grade was not an inferior Apple, but had only a slight blemish—the aggregate of the black spot would not cover more than a threepence—and there was a ready market for this grade. In the conference that had been called, Tasmania had been obliterated by the Commonwealth Government. Tasmania was the only State that had not had fair representation. He strongly objected to State inspectors making regulations. They were not competent to do so, for it was the growers' concern. The Board would be moral cowards if they did not make a vigorous protest. He knew Victorian growers were not in favor of the proposed amendment. He moved:—

That Senator Ogden be communicated with and asked for a reply to the representations made to him by the deputation that waited on him, and if his reply be unsatisfactory, that a conference of Federal Members of Parliament, State Ministers, and the Board, be called.

Hon. W. H. Calvert seconded the motion.

Mr. Eddington said that the "plain" grade was a good carrying type that arrived in sound condition in British markets.

Mr. Peacock said that the whole procedure was idiotic and incomprehensible. Regulations should only be made or altered in consultation with the Advisory Board, which represented the whole of the growers. Tasmania was sending away more than two-thirds of the Apples exported from Australia. There was no need to alter the regulations, for they were working satisfactorily. It was absolute "bosh" to say that the fruit going away was detrimental to the market.

The motion was carried unanimously.

Growers' Wharf Representative.

Members stated that much damage to fruit was caused when stowing in ships' holds, and the recommendation of the last conference should be adopted for the appointment of a growers' wharf representative to see that every care was taken in loading.

It was decided, on the motion of Messrs. Davies and Eddington, to call for applications for the position: salary, £6 per week; regular reports to be made to the Board.

"KANGAROO BRAND."

Helps Sell Australian Fruit.

The great work being carried out by the Empire Marketing Board in Britain with regard to the advertising of Empire products should do much for Australian fruitgrowers.

Taking advantage of the fact that any produce marked "Empire" is preferred to foreign produce, the Board is providing shopkeepers with attractive show cards. Each country is represented by a different animal as the main theme of the card, and the distribution of the cards fit in with the season when the goods advertised are readily procurable in the shops.

Australian Sultanas are brought into prominence with a card depicting a kangaroo, and bearing the words "Buy Australian Sultanas." "Buy From Within the Empire." The cards are in great demand by shopkeepers and traders who are in the competitions arranged by the Board for window displays of Empire products.

TOO MUCH ROPE.

Bess: "I think a man should give his wife plenty of rope."

Fred: "Yes! That's what I did with mine, and she skipped."

Australian Fruit Export.

Programme of Steamers.

It is anticipated that the quantity of fruit to be shipped from Australia during the present export season will be around 2,000,000 cases.

The following is a list of steamers carrying fruit, giving the loading dates at Hobart and the ports of discharge.

It is possible that in addition there will be one or two for May-June loading which will be accepted later.

After loading in Tasmania, certain ships will lift cargoes of Apples and Pears from Albany and Fremantle.

The quantities from Victoria and South Australia this season are negligible.

The programme is as follows:—

Fruit Steamers, 1929.

February-March.

To be delivered Hobart Wharf:—

	Steamer.	Destination.
Feb. 20—	Chitral	London
21—	Jervis Bay	Hull
28—	Otranto	London
Mar. 4—	Port Bowen	Hull
4—	Port Bowen	Hamburg
6—	Maloja	London
14—	Ormonde	London
15—	Nestor	Liverpool
19—	Port Gisborne	Hamburg
19—	Port Gisborne	Liverpool
20—	Mongolia	London
20—	Largs Bay	Hull
21—	Borda	London
27—	Ceramic	Liverpool and Southampton
28—	Orford	London
28—	Leuna	Hamburg

April-May.

April 1—	Banffshire	Manchester (Loading at Hospital Bay)
3—	Moldavia	London
3—	Moreton Bay	Hull
4—	Benalla	London
11—	Oronsay	London
13—	Demosthenes	Liverpool
17—	Comorin	London
18—	Beltana	London
19—	Hochst	Hamburg
22—	Delphic	Hamburg
24—	Port Adelaide	Hull
24—	Port Adelaide	Hamburg
25—	Orama	London
27—	Ferndale	Hull and Hamburg
May 1—	Narkunda	London
2—	Hobson's Bay	Hull
4—	Ulysses	Liverpool

Tasmanian growers are asked to note that, with regard to White Star and Aberdeen line steamers, although the port of discharge is shown as

Liverpool, it is usually necessary to supply a small quantity of fruit for discharge at London. The White Star and Aberdeen steamers call at London before Liverpool, and to allow access to the lower holds when London cargo is stowed therein, the White Star line request fruit occupying the square of the hatch in the fruit compartment in the 'tween deck chambers (which are, of course, above the lower holds), to be discharged at London.

Branding of Cases.—Growers who have not previously shipped fruit overseas are asked to note that it is necessary for the following to be shown on the case:—

- (1) Grower's shipping brand.
- (2) The English consignee's number.
- (3) Initials denoting variety of fruit.
- (4) Size of fruit; and
- (5) Grade—"Special," "Standard," or "Plain."

Example.

J. BROWN.

TASMANIA, AUSTRALIA.

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CLEO.

Standard. 2½ ins.

Space for Pears.—The White Star line steamers—"Ceramic," "Demosthenes," and "Delphic"—will have space for Pears, which is being allotted among growers.

When forwarding trays, 25 should be calculated as equal to 10 cases. Limited quantities of Pears will be accepted (at the discretion of the engineers) by the following steamers:—"Maloja," "Mongolia," "Largs Bay," "Port Gisborne," "Banffshire," "Moldavia," "Moreton Bay," "Benalla," and "Comorin."

Shipments from Northern Tasmania.

The following vessels will be loading at Beauty Point for the ports of discharge shown:—

March 8.—Port Bowen—Hull, Hamburg.

March 23.—Port Gisborne—Hamburg, London.

April 9.—Telamon—Glasgow, Liverpool.

April 13.—Port Hunter—London.

April 29.—Port Adelaide—Hull, Hamburg.

In addition to the published Hobart programme, it is likely that one or two additional steamers will be available for May-June loadings.

Co-operative Marketing Pays.

U.S.A. Growers Unite to Cut Costs

Advertising Sells More Fruit.

(By R. E. Boardman.)

COO-OPERATION is an effective force in U.S.A., but it is not looked on as a cure-all.

Co-operative marketing in U.S.A. does not mean the setting of competing selling agencies, but the organising of production in country districts, the improving and standardising of grades, the buying of supplies in bulk to reduce costs, advertising and generally working in harmony with the wholesale and retail trade.

Producers are reminded of the limitations as well as the possibilities of co-operative marketing.

Producers co-operate among themselves to standardise their goods, and then work in harmony with the distributors to dispose of the crops most effectively.

It was a privilege to see the co-operative organisations functioning in California and elsewhere on the Pacific Coast. Here are some of them:—The California Fruit-growers' Exchange, the Walnutowers' Exchange, the Sunmaid Raisingrowers' Association, the Almond Growers' Exchange, the Peargrowers' Association, Canning Peachgrowers' Association, the Mutual Orange Distributors, Fig and Peachgrowers' Association, and many others.

In Oregon there is the Hood River Applegrowers' Association, the Berrygrowers' Association, etc. In the State of Washington there are 170 co-operative associations, the total sales value being £10,000,000.

I will here give an outline in this article of what has been accomplished in the prosperous North-West State of Washington, which is the biggest boxed-Apple producing State of the Union (large quantities of Apples are sold in barrels in the Eastern States).

Other products which are marketed co-operatively include eggs and general poultry products, milk and dairy goods, vegetables, grain and forage crops.

Co-operation Pays.

In the well organised State Agricultural College at Pullman, Washington, there is a division of agricultural economics. A close study with regard to co-operative marketing led to the issuing of a considered statement setting forth the whole position in detail.

Co-operation in marketing is advocated. The closing words are these: "Remember that intelligent co-operation pays. History proves it."

It is pointed out that while co-operative marketing has large possibilities for benefiting primary producers, the idea of monopolistic price fixing must be discounted. The belief that organisation does offer producers large opportunities for such price fixing has led to so many failures, it is so persistent among the uninformed, it has been exploited by demagogues for selfish reasons, and its removal is essential to a proper understanding of the actual possibilities of co-operative marketing.

Then follows a list of examples citing the impossibility of arbitrary price fixing and giving examples relative to wheat, Prunes and milk. Continuing, the Economic Research Council states:—

"Another claim sometimes made for co-operative marketing is that it will enable all farmers to make profits.

"Co-operative marketing cannot assure everybody of profits. Profits in agriculture will always be only for the efficient."

What is Marketing?

Many people think of marketing as only selling, as, for instance, when a farmer sells a horse to his neighbor. In reality, marketing is spanning the gap between the producer and the ultimate consumer, and it involves the following:—(1) Assembling; (2), grading and standardising; (3), packaging; (4), storing; (5), processing (in some instances); (6), transporting; (7), financing; (8), distributing; (9), selling.

Washington continually lays stress on grading and standardising, stating that these are services of which too few growers realise the significance. Consumers insist on having graded goods, and on having the grades the same at all times. Grading and standardisation cost money, whether done before the goods are removed from country points or after—but efficient marketing is impossible without them, and one of the greatest opportunities in marketing is through better grading and standardisation.

In the final act of selling, the services of wholesale distributors and retailers become necessary, and here, again, the organisation of supplies, through district co-operation, and the quality and grading, very largely decide the prices.

Two conditions which are generally accepted in U.S.A. as essential in co-operation, are:—

- (1) Control of the local organisation by the producers.
- (2) The saving of expenses by organisation, rather than thinking of profits through marketing as a distinct enterprise.

Buy in Bulk.

In matters of broad principle, the organisations in the State of Washington are identical, viz., the unity of the growers in convenient local groups, pooling, and standardising the fruit, organised deliveries to salesmen and buyers at the selling points. One co-operative makes a feature of purchasing supplies in bulk, thus reducing costs of production; another has adopted a clever advertising programme, which has performed two services:—

- (1) Sold more fruit;
- (2) Brought higher prices to the grower.

The "Skookum" Apple Packers' Association is doing with Apples exactly what the "Sunkist" people are doing with Oranges, and both have the goodwill of the trade and the public. ("Skookum" is an Indian word, meaning "good, fine, splendid.")

Co-operation on sound business principles—standardising grades, reducing costs of production, working in harmony with distributors, and advertising—has materially assisted in the prosperity of the producers, and in so doing has benefited the State as a whole.

The Orchard Tax

Success in New Zealand and New South Wales

The last Victorian Fruitgrowers' Convention at Burnley, carried a resolution in favor of an orchard tax. When this was brought under the notice of the then Minister for Agriculture, the Minister stated that the growers appeared to be divided on the subject. No sooner did one set of growers come and ask for an orchard tax or Registration Act, than another set of growers came and opposed the suggestion.

Speaking on the same subject, Mr. G. Knox, M.L.A., who represents a large fruitgrowing district, said that he was personally in favor of the orchard tax, but a duty rested on those who were urging the orchard tax to submit a preliminary balance-sheet of the estimated receipts and expenditure. This should be circulated widely, so that all interested would see on what lines the proposals were taking shape.

Speaking of the last Annual Conference of the Metropolitan Fruitgrowers' Association at Box Hill, Mr. John Tully, who has for many years taken a great interest in matters relating to the fruit industry, suggested the following allocation of the money, should an orchard tax ever be enacted.

For collection of tax, say 10 per cent. proportion for local Associations in which the money was raised, say 20 per cent.; leaving 70 per cent. to be used by the central organisation. Consider for example, a district in which there were, say, 100 growers. At the present time, possibly 40 or 50 would be members of the local Association, the others taking no interest in the movement.

From the money raised by an orchard tax in that district, the sum necessary to run the local fruitgrowers' association in that district should be provided. All local members would thus automatically belong to the district association, and all would contribute equally. There would then be no need for the present members of the local association to pay their subscriptions, as the amount for the local subscription would be provided in the orchard tax.

Continuing, Mr. Tully stated that he thought it was only upon such lines that the orchard tax proposal would meet with favor. Several speakers at the Metropolitan Fruitgrowers' Conference opposed the orchard tax.

There is an orchard tax operating in N.S.W., the provision for which having been included in the Plant Diseases Act, Section 19 of which reads as follows:

(1) Every orchard and nursery, unless exempted by the Minister, shall be registered by the person in the manner and at the time prescribed. The application for such registration shall be accompanied by the prescribed fee. Such fee shall not exceed one shilling per acre of the land comprised in the orchard or nursery.

(2) The fees in respect of the registration of orchards and nurseries, shall be paid into a special account at the Treasury.

(3) The Colonial Treasurer shall, upon the recommendation of the Minister, pay out of such special account, moneys—

(a) to any society registered under the Co-operation, Community Settlement, and Credit Act, 1923, which has among its objects the promotion of the production treatment and sale of fruit;

(b) to any other association or body of persons who, to the satisfaction of the Minister, will wholly apply such moneys to the promotion of the further production, treatment, and sale of fruit;

(c) to be used in any manner which the Minister deems to be best calculated to develop or protect the fruitgrowing industry.

(d) to any person whose property has been destroyed as compensation for such destruction.

(4) Any moneys so paid other than moneys paid under paragraph (d) of sub-section three of this section, shall be expended for such purposes in furtherance of the interests of the fruitgrowers or nurserymen of New South Wales as in any particular case the Minister may approve or generally as may be prescribed.

(5) The expenditure of any moneys so paid other than moneys paid under paragraph (d) of sub-section three of this section, shall be accounted for in such manner as may be prescribed.

* * *

The number of growers in N.S.W. is given as 16,000, and the total sum collected about \$4,500. The number of growers seems high, but the fee is collected on everything from a quarter of an acre upwards.

The N.S.W. Fruitgrowers' Federation receives about \$3,000 annually

from the fund—it is the sole revenue of the Association.

* * *

The orchard tax has operated differently in New Zealand. There the growers requested an orchard tax of 1/- per acre for five years, and a special Act was drafted, and made law accordingly,—this being quite apart from the activities of the Department of Agriculture. The amount raised was something under \$2,000 per annum, and after the Act had been operating for five years it was decided by the growers to request a further continuation for another five years. To administer the funds the New Zealand Fruitgrowers' Federation was formed, and this organisation has now been placed on a firm and satisfactory basis.

* * *

It might be noted that when N.S.W. fruitgrowers approached the Minister, requesting an orchard tax, they desired it to be on the lines of the New Zealand Act. Similarly, in approaching the Minister for Agriculture in Victoria, growers have made it clear that they desire the Act along the New Zealand lines, and that they do not desire the funds to be administered by the Department of Agriculture. The idea is to avoid any possible political complications.

For instance, if the growers desired to criticise the Department for any real or fancied reason, it is obvious the relations could easily become strained if the growers' organisation depended on the grace of the Minister for the time being, in granting supply.

DE DUCKS GOT IT.

A negro cotton planter went into a store and asked for credit.

"Why?" asked the storekeeper.

"Wall, suh, de ducks got 'bout all dat cotton of mine."

"What do you mean? De ducks got it?"

"Yessuh, dat's what ah said. De ducks got 'bout all dat cotton. Ah sends de cotton up de river to market, and dey deducks for freight, deducks for storage, deducks for commission and taxes—and deducks 'bout all dat cotton—and dat's why Ah'm heah. Yassuh."

False friends are like our shadows, they keep close to us while we walk in the sunshine, but leave us the instant we cross to the shade.

Cold Storage In Australasia

FRUITGROWERS' COOL STORES ASSOCIATION OF VICTORIA.

The quarterly meetings of the Fruitgrowers' Cool Stores Association of Victoria, were held on February 21, at Melbourne.

At the executive meeting (Cr. W. Mock presiding), reports of sub-committees were received. There were present, Cr. W. Mock (President), Messrs. J. H. Lang, H. L. Tomkins, J. W. Aspinall, and the Secretary, Mr. J. G. Aird.

Mr. R. E. Boardman attended by request, and submitted an educational programme for the Association. It was decided that this be circulated among affiliated stores, with a view to its adoption.

Fruit Marketing.—Mr. J. H. Lang submitted a proposal for the better disposal of the 1930 Apple crop, which should normally be a heavy one. The country trade should be co-ordinated and developed, avoiding the clashing of truckloads from different centres. It was decided to send a questionnaire to growers, and to call a conference to deal with the matter.

Plums.—Mr. H. L. Tomkins protested against the action of the jam factories in not fixing a price for Plums, etc., delivered. Growers delivered the fruit, but were told the price would be decided later: this was humiliating.

Mr. J. H. Lang said the nominal price was £6 a ton. At four tons to the acre (equalling £24 per acre for the fruit), the production was unprofitable, and Plums were going out of cultivation.

The forty-fifth quarterly meeting of the Fruitgrowers' Cool Stores Association was held at Melbourne on February 21, Mr. W. Mock presiding over a full attendance.

Australian Conference.—The Minister of Markets replied, stating they would need to be convinced of a general desire in the several Commonwealth States before convening the conference. It was decided to write

to fruitgrowers' organisations in the several States, urging the calling of the conference.

Narre Warren Store.—The resignation of the Narre Warren store was accepted.

Next Conference.—The invitation from Batlow, N.S.W., was appreciated, but it was doubted if a sufficiently representative gathering would result. Decided to circularise affiliated stores.

It was decided to favor a petrol tax in lieu of present motor taxation: to congratulate Mr. C. C. Brittlebank on his new appointment.

The Pear Export Committee reported that owing to the poor season such Pears as were offered for export would go through the usual channels.

Mr. J. H. Lang and Mr. G. F. Fankhauser were appointed delegates to the Farmers' Convention at Warra-gul.

Mr. Lang reported that the engine-drivers' claim in the Arbitration Court could not be heard till after June.

Mr. J. M. Jacobs, who was to have given a talk on ice container for interstate transport, was unavoidably absent.

PREPARING FOR THE 1930 APPLE CROP.

The Cool Stores' Association of Victoria is taking early steps to prepare for the 1930 Apple crop, which should be a heavy one. The following is a copy of a circular issued to growers by the Association:—

As there is every prospect of an abundant crop of Apples for the 1930 season, it is advisable that some effort be made for the organised marketing, that the grower may receive a remunerative price for his product. The Victorian Cool Stores' Association has appointed committees to report on the various outlets, such as oversea, interstate, metropolitan and country trade.

As the production of Apples for 1928 was only two cases per head of

population for Victoria, or one Apple per day for the year, the problem confronting the growers is one of distribution rather than sales. Get the Apples in good condition to the people throughout the State, and sales will naturally follow.

The outlet that offers the greatest prospect for increased supplies is the country trade.

No organised effort has in the past been made to develop this. True, some districts and individuals are engaged, but much more could be done.

What is wanted is a State-wide policy with the co-ordination of every grower, so as to prevent the overlapping that has often occurred in the past—one district sending a truck too soon after another district, resulting in unprofitable prices, and the upsetting of the market for an indefinite period.

It is recognised that some districts have developed a good connection in and around their own centres, as far as possible these should be allowed to continue, without interference from other districts.

A meeting will be called in Melbourne in the near future to formulate a definite policy of Apple distribution for 1930. We would be pleased if you would send a delegate to represent you, in the meantime information as per enclosed form will be useful.

District	
Acres—Apple trees	
Bearing	
Non-bearing	
Production, 1928—	
Cases	
Market, 1928—	
Oversea: Cases	
Interstate: Cases	
Metropolitan: Cases	
Country Trade	
Remarks and suggestions	

VALUE OF COOL STORES.

Speaking at the quarterly meeting of the Fruitgrowers' Cool Stores Association of Victoria, the delegate from Harcourt, Mr. J. H. Lang, said he considered their cool store was worth £100,000 to the district, although the paid-up capital was £20,000, portion of which had been paid in the storing of the fruit.

The Secretary, Mr. J. G. Aird, said that Victoria had cold storage space for 1½ million cases.

PRE-COOLING OF FRUIT.

South African Methods.

All Export Oranges Are Pre-cooled.

THE EXCELLENT NAME established by South Africa on the European markets for the quality of her fruit, is due in no small measure to the methods adopted in grading and packing and the care bestowed on all the essential factors as regards handling.

Since the export of fruit from South Africa commenced in real earnest, much experimental work has been carried out, and now the correct storage conditions can be accurately prescribed for any variety of fruit grown in the Union.

The recent establishment of the Government Fruit Pre-Cooling Station at Capetown has assisted the growers to land their fruit on overseas markets in perfect condition.

In an article dealing with the pre-cooling of fruit at the new station, the "Imperial Food Journal" states:—

When fruit is exported in refrigerated spaces, it is usually maintained at a temperature of round about 30 deg. F., varying slightly according to the variety of fruit. It was decided that, especially in the height of the export season, when refrigerated vessels were not always available, a plant on shore, in which the consignments could be cooled to the correct temperature and held while awaiting shipment, was essential.

At the present time, the plant in Table Bay is the only one of its kind in South Africa, and, consequently, nearly all the fruit from the different provinces is concentrated at Cape Town. A similar plant, which is to be erected at Durban, will shortly be available, and will relieve the Cape Town plant of most of the fruit from the northern districts.

Pre-cooled Oranges.

Citrus fruits, such as Oranges, etc., form the principal fruit treated at Cape Town, and 5,000 tons can be stored in the plant at one time. Oranges require a slightly higher temperature than other fruits, 40 deg. F. being the temperature at which the fruit are best preserved. The period of refrigeration varies considerably; the fruit can be reduced to the correct temperature ready for export in six hours, or, if shipping facilities are not available, they can be stored for several weeks without impairing their marketable value. The average period of storage, however, is about ten days.

In order to ensure that the prescrib-

ed quality and standard is maintained, five per cent. of each consignment of fruit passing through the plant is set aside for examination by Government experts. The marked cases are opened and each specimen is unwrapped and carefully studied. If the fruit inspected conform with the regulations, the whole consignment is passed. If the fruit is below grade, the whole consignment is returned for re-sorting.

Handled Once Only.

A feature of the process is that from the time the box of fruit is loaded on to the train in the district where the fruit is produced, until it is stacked in the cold chambers of the exporting vessel, it is handled only once. The freight cars containing the fruit cases are brought alongside a platform in the pre-cooling building, when the boxes are unloaded by hand on to trolleys.

When a trolley is fully loaded with fruit cases, it is raised by a lift to the floor above, where it enters one of a number of cold chambers, each capable of holding twelve trolley loads. After a period of six hours in the refrigerator, the fruit has been reduced to a suitable temperature for shipment.

When a vessel has arrived and is ready to receive a consignment, the trolleys leave the chamber by a door at the opposite end to that by which they entered, and are lowered by a crane into the hold of the waiting ship, where they are carefully stored in the refrigerated chambers. The empty trolley is then returned to await another load of fruit from the freight trains.

The maximum weight of fruit that can be sent from the cooling plant to a vessel's hold in an hour is 350 tons, but this rate cannot be maintained, as the proper stowage of the fruit cases on board is a lengthy operation, which can only be done efficiently by hand.

As the fruit is off-loaded from the freight train, a careful check is taken, and after they have been placed on the trolleys no further check is necessary until the fruit arrives at its destination. Up to the present, it is claimed that not a single box has been missed or stolen in transit.

A fine class of steamers handle the South African fruit exports, and each has a fruit-carrying capacity of 1,000 tons. New steamers that are in contemplation for this trade will have a capacity of 1,800 tons for fruit storage.

Bitter Pit in Apples.

Some Recent Investigations.

No satisfactory guide to the maturity of Apples for picking has been devised up to the present (writes Mr. W. M. Carne, Department of Agriculture, W.A., in the journal of the Council for Scientific and Industrial Research).

Recommendations based upon the development of the ground color, the color of the pips, and the ease in which the fruits leave their stalk, are generally given.

In the picking tests with Cleopatra, typical fruits of each grade at each picking were treated with iodine and photographed. When the final results of storage were obtained in regard to bitter pit, color, and flavor, the results were compared with pictures of the iodine reaction for the several pickings. It was then found that the amount of starch shown by the iodine shortly after the Apples were picked, was definitely related to the amount of bitter pit, color, and flavor subsequently developed by the Apples in storage.

It was concluded from these tests that the iodine test renders it possible to predict the condition in which Apples emerge from cold storage. The best results were obtained from fruit which showed only small scattered patches of tissue containing starch when picked.

Results of Investigations.

The principal results of investigations can be summed up as follows:—

1. Bitter pit is a disease occurring principally, if not entirely, in Apples after picking.
2. Cork, especially in the form of blotchy cork, is the disease previously known as bitter pit developing on Apples while on the trees.
3. Jonathan spot is a superficial spot disease noted principally on Jonathan and Spitzenberg, but also occurs on many other varieties.
4. The problems of cork and Jonathan spot still await solution.
4. Bitter pit is produced in Apples by picking before the fruit is sufficiently mature.
6. The correct picking date for varieties susceptible to bitter pit can be ascertained by treating the Apples with iodine immediately after picking.
7. Picking Apples later in the season for export, than has been usual, will not only reduce the liability of the fruit to bitter pit, but will ensure high quality in flavor and appearance.

THE FARM ENGINE.

(By R.W.)

THE farm engine is an indispensable unit of the modern farming plant. Manual labor is expensive, but the little engine will toil at all hours, doing ever so much more work, yet asking for no more recompense than is represented by the small quantity of oil and spirit that enables it to function.

No longer is the farmer required to toil and perspire at the log heap, the chaffcutter, the separator, the pump, or the many other monotonous

Spraying Fruit Trees.

A gratifying feature of farm engine usage is that the great bulk of the trade is in the hands of Australian manufacturers, who turn out engines of remarkable quality and reliability at a figure within reach of all. It was a revelation to me when recently shown over the farm engine section of the largest manufactory of farm machinery in Australia, to observe the minute attention to detail and exactitude that is expended on the machining and fitting of the component parts, so that I was not surprised to find the assembled en-

gines on the test bed developing well over their rated horse-power.

General as is the use of the engine, it is not yet exploited as widely as it might be by Australian farmers, and if this article has awakened the interest of some who have not realised its great scope of utility, it will not have been in vain.

SHOWS TO COME.

Victoria.

Diamond Creek, March 9.

Bunyip, March 13.

Somerville, March 13.

Lilydale, March 20.

Red Hill, March 20.

Yarra Glen, March 20.

Bacchus Marsh, March 23.

Croydon, March 22, 23.

Garden Week, Melbourne, April 9-13.

New South Wales.

Batlow, March 26, 27.

Too Much Talk.

Sambo: "Ah wants a divorce. Dat woman she jest talk, 'an talk, 'an talk. Ah can't get no rest, and dat talk am drivin' me crazy."

Young lawyer: "Well, Sambo, what does she talk about?"

Sambo: "She doan' say."



2 h.p. Engine and 2-Knife Chaffcutter.

muscle-racking jobs that once took up his time. The little engine does it all, and the farmer finds the operations carried out more quickly and more efficiently, allowing him to devote more time to other interests on the farm, and enabling him to enjoy a meed of leisure that throws into vivid contrast the conditions of present-day farming and those of olden times.

Expense of installation is not a serious obstacle, as a two horse-power petrol engine will do most of the ordinary jobs, and a four horse-power petrol or kerosene engine will operate quite a large chaffcutter or sawbench, and when coupled to a pump will lift water to an immense height. On the grounds of economy, a farm engine is absolutely essential to successful management, be it on farm, orchard, vineyard, or dairy.



At a cost of 6d. in petrol and an hour's attendance, the farmer cuts half a ton of chaff.

Editorial Chats



MUCH SYMPATHY will be felt for Tasmania in the attitude the growers there have adopted with regard to the alterations in the fruit export grading regulations.

In the first place, dissatisfaction is felt at the manner in which the alterations to the grading regulations have been brought about. This, for the time being, has taken precedence over the actual new regulations.

As regards the new regulations, opinions in Australia are divided. Some growers affirm their desirability, others strongly condemn.

Tasmania's grievance is that she did not have a voice in the altering of the grades. Even those growers who believe amended regulations to be desirable are agreed that it would have been advisable for Tasmania to have been fully consulted, if only from the fact that the Island State contributes two-thirds of the Apple export from Australia.

It must not be forgotten that Tasmania feels aggrieved because of disabilities suffered under Federation, in particular the coastal clauses of the Navigation Act having proved very detrimental. This point was stressed in the recent report of the British Economic Mission.

The Tasmanian State Fruit Advisory Board, an organisation truly representative of the Tasmanian fruit industry, was not consulted in regard to the alterations to the grading regulations.

The position may be simply stated thus: At the vital conference which decided on the amended grade, the several exporting States were represented by the Federal officers administering export regulations. In all the States except Tasmania, these Federal officers are also State officers, and who, for the purpose of conducting export, administer the Federal regulations.

In Tasmania the position is different. There, the State officers are not permitted to act as Federal officers in relation to export. The Federal Department has its own officer to supervise exports. This officer has no connection with either the State Department of Agriculture of the Tasmanian Fruit Advisory Board.

At the vital conference referred to, this Federal officer represented Tasmania, so it will be readily seen that neither Tasmanian growers, nor their appointed representatives had any voice or vote in the matter.

The total value from agricultural pursuits in Tasmania in 1927 was £2,250,000, of which the Apple harvest—a moderate season—was worth £1,000,000. It will thus be seen that fruitgrowing in Tasmania is a major enterprise.

A few years ago when the Australian Conference of Fruitgrowers held its appreciated sessions in the several States, much good feeling was created and interstate barriers were broken down.

However, a change came when the Federal Government called the National Fruit Council into existence. Doubtless this was done with the best intentions of assisting an important primary industry, but the fact remains that these conferences lacked all semblance of social intercourse and in some well-remembered instances ran counter to the growers' wishes.

The National Fruit Council has not met for some years, and it would appear to be eminently desirable that the Australian Conference of Fruitgrowers should again resume its activities in order to give the growers some effective voice in regard to this vital matter of export, as well as other subjects which we have enumerated from time to time, not forgetting the very important work of the Pomological Committee.

"FRUIT WORLD ANNUAL."

A copy of the 1929 "Fruit World Annual" is being posted to every subscriber of "The Fruit World."

The "Annual" is a valuable production, containing a complete statistical review of the industry in all the Australian States and New Zealand.

The articles include the following:—

Packing Apples, Pears, Peaches, Oranges, Lemons, Tomatoes. Illustrated.

Cold Storage in Australia and New Zealand.

Marketing Australian Fruit Abroad and Locally.

Statistics of the Australian and New Zealand Fruit Industries.

The Australian Fruit Industry, with details of production in each State.

The New Zealand Fruit Industry.

Spraying to Control Insect Pests and Fungus Diseases: illustrated in natural colors.

Manuring and Soil Culture, the dried fruits, canned fruits, and citrus industries; fruitgrowers' bookkeeping system, and many other articles of interest and value, the whole comprising an issue of 128 pages. Additional copies may be obtained for 1/6 from the "Fruit World" Pty. Ltd., Box 1944, G.P.O., Melbourne.

PERSONAL.

Mr. C. C. Brittlebank, who recently retired by effluxion of time from the position of biologist to the Victorian Department of Agriculture, has joined the staff of the Council for Scientific and Industrial Research, and is compiling an index of the fungus diseases affecting Australian plant life. It is good that Mr. Brittlebank's capable services are thus to be still available. He has won the respect of all by his ability and diligence. In U.S.A., the United Kingdom and elsewhere, Mr. Brittlebank is widely esteemed.

Mr. R. A. Haynes, managing director, Wood, Son & Co., has been appointed by the Commonwealth Government as Australian commercial representative in Canada for five years (from April 1), at a salary of £3,000 a year.

Among other qualifications, Mr. Haynes is an expert in dried fruits. He visited Canada in 1926 on behalf of the Australian Dried Fruits Board, and performed fine service in increasing the sale of Australian dried fruits.

The appointment is a popular one, especially in dried fruit circles. It is expected that under the terms of the preferential trade agreement there will be a large increase in dried and canned fruits trade with Canada.

Mr. E. A. Neil, President of Uralla Fruitgrowers' Association, N.S.W., called at the "Fruit World" office during January. He is a brother of Mr. John Neil, Carlingford, N.S.W., one of the pioneers in founding the

New South Wales Fruitgrowers' Association. This organisation, states Mr. E. A. Neil, is functioning efficiently. Under the orchard tax system all growers must register, and the district inspector checks areas where necessary. Until recently it was necessary to pay the orchard tax to the Department of Agriculture, but the method has been simplified in that growers can now pay the tax locally through the Court of Petty Sessions.

The N.S.W. Fruitgrowers' Federation is financed entirely from the orchard tax, no subscriptions being received from the branches of the Federation in the country districts. Mr. Neil speaks well of the services of Colonel Herrod, Secretary, and Mr. Wilson, Organiser. Members of the country branches of the New South Wales Fruitgrowers' Federation pay a nominal sum to cover the out-of-pocket expenses of the local Association. In some districts (of which Uralla is one) growers purchase their supplies co-operatively, thus effecting considerable savings, enabling them to pay for Secretarial duties.

Mr. Neil is a keen advocate for organisation amongst fruitgrowers. He states that growers obtain substantial financial benefits and at the same time have an effective voice when approaching public departments or other bodies. Mr. Neil travelled through various Victorian fruitgrowing districts, and noted with regret the light Apple crops. Mr. Neil is interested in the firm of Messrs. H. N. Harris & Co., 23 Roma-street Market, Brisbane, a firm which acts as fruitgrowers' agent and makes a special feature of country orders.

FRUIT PIES.

Why Does Not Australia Make Them?
(By R. E. Boardman.)

America knows how to make fruit pies, but I'm afraid Australia has not yet acquired the art. If you go into any American city, town or village, and ask for a pie, you are not served with a piece of pastry containing stewed meat, but instead, with a fragrant and appetising fruit pie of any variety you like to mention: Apple, Peach, Pineapple, Strawberry, Loganberry, Prune, Raisin, etc.

There is a fortune waiting for a caterer who will make similar pies in Australia. These fruit pies are not the round crusty apologies supplied in Australian restaurants—more crust than fruit; instead, the fruit portion is about two inches thick. Real pies! Very more-ish.

More fruit goes into the pie trade than into any other method of distribution. Imagine a round pie 10 in.

in diameter (the fruit being 1½ to 2 inches deep), cut into six equal segments. When you ask for pie and "cawfee," you name the kind of fruit you want and you get one of these delicious segments. These pies are appetising, healthful. You can have fruit pie for breakfast, dinner, afternoon tea, or with the evening meal.

Because Strawberries, Loganberries, Raspberries, etc., are frozen in barrels, you can have these pies every day of the year. Apple pie is a great favorite, so are the others I have mentioned.

We know what Raisin puddings are like, but how many Australians have tasted Raisin pie?

If we come to think it out quietly, it is obvious that Australia has not yet begun to seriously tackle the opportunities for fruit distribution.

A few years ago Raisin bread was unknown in Australia. Then Mr. Clapp, of the Victorian Railways Department, started making it, and set the fashion. The Dried Fruits Association followed up the good work. Now Raisin bread is well known and absorbs a very considerable quantity of dried fruit.

It seems only yesterday that the Railways Departments started its campaign for fresh Orange drinks. Yet the Railways Department, now purchases 40,000 cases a year, and thousands of other cases are being sold for fresh fruit drinks at soda fountains.

When Australian fruitgrowers become seized with the importance of teaching the public to eat fruit pies—real fruit pies—there won't be enough fruit in Australia to supply the need.

Think it over.

EASTERN MARKETS.

For Australian Fruit.

Waiting to be Exploited.

There are markets abroad for Australian fresh and canned fruits in far larger quantities than the present shipments to foreign parts.

The United Kingdom is not the only market that can be exploited for there is a market in the East that has hardly been touched by Australian exporters of canned and fresh fruits.

Among the teeming millions of the East there are people who can well afford to pay a fair price for our exports. America has for 25 years supplied this market with canned goods, particularly Cherries, Peaches, Pears, Apricots, Grapes and Plums. The packers of U.S.A. send over two million pounds weight of canned fruit every year to China, Japan, and

Australia, yet in a fruit-growing country like ours, we only export 2,300 dozen tins of canned fruit to the Eastern markets that are so close to Australia.

There is a demand in China today for one uniform grade of canned fruits of high quality, and Australia is well able to supply that demand.

America is steadily forging ahead with her supplies of Oranges and Apples to foreign markets. The United Kingdom is still her best market for export, but the figures relating to countries near Australia are a revelation. There is evidently a good market for Apples and Oranges in the East, judging by the amount of American fruit exported to China, Malaya, and the Philippines.

The American fresh fruit exporters sent last year to the Philippines, 105,000 boxes of Apples, besides a considerable quantity of other fruits. To China was sent 59,000 boxes of Apples, and 25,000 boxes went to British Malaya.

China also took 64,000 boxes of Oranges, Philippines 45,000, New Zealand 55,000, Australia 10,000, British Malaya 9,000, and Japan 5,000.

Canada is the largest buyer of Lemons from U.S.A., but a considerable quantity is sent to the East and Australia. Here are the export figures for American Lemons last year:—Canada 232,000 boxes, New Zealand 16,000, China 15,000, Japan 14,000, Philippines 7,000, Australia 7,000.

United States exported 3,600,000 boxes of Oranges last year. This is about 6 per cent. of total production. Canada took 2,600,000 boxes, and United Kingdom took 600,000 boxes. United Kingdom imported from U.S.A. last year 2,153,000 barrels and 3,100,000 boxes of Apples, while Canada took 80,000 barrels and 581,000 boxes.

Colombie Apple Export Competition.

Owing to the Victorian Apple crop being so short this season as to be barely sufficient for State requirements, which means that few Apples, if any, will be exported, it has been decided to postpone this competition until 1930. This being the case, the winner of the 1928 season, Mr. R. E. Fowler, Pomonal, will hold the cup until such time as he is dispossessed by the next winner.

A USEFUL HINT.

When baking fruit pies or tarts, before putting in the fruit brush over the lining of pastry with milk. This causes the flour to cling together and the juice will not run out.

THE AUSTRALIAN CITRUS GROWER



PRUNING CITRUS TREES.

DEMONSTRATIONS in the pruning of citrus trees were recently given by Mr. J. C. Johnston, Tulare County Farm Advisor, California. The following are some of the points he brings out, states a writer in "California Cultivator."

The tree consists of the roots, stem and leaves. These leaves are really the stomach of the tree, and they build the root system and framework so that the fruit may set. To cut this growth means cutting off just so much leaf area which promotes new leaf growth to feed the trees and results in less fruit. This has been found true of deciduous fruit trees also, but it is more true of evergreens.

It has been found by practice and experiments that the less cutting done the more fruit will be produced. Of course, this is not true for an indefinite period for dead wood will result by starvation or shading out, and the object of pruning is to

build up a framework which will hold the greatest amount of fruit. Of course, this size will depend upon the soil.

There is a direct correlation between the size of the tree, the amount of fruit the tree can carry, and the richness and depth of the soil. It has been found that it is best to keep just below the maximum amount of fruit which can be grown so that the tree will not be taxed to its limit, and will have some reserve to draw upon so new growth will result each year.

If an unfavorable season should come then a great deal of die-back will be avoided. But it must be remembered that every cut which is made means a loss of fruit due to that cut. In this phase the citrus tree is different from deciduous trees

in that they thin themselves while the latter set too heavily, and must be thinned.

In a young orchard, and there are many being started now, due to higher prices, no cuts should be made unless some branch is entirely out of place. All new wood and so-called sucker growth should be favored. From three to five branches should be kept for a framework, and no attempt should be made to make any further framework beyond that point for a citrus tree will branch freely.

Those who practice girdling branches should not cut out any wood from the interior of the trees, for if this is done there will be no wood, either on the outside due to girdling or on the inside due to pruning, and in a short time the bearing area will be reduced too much.

Many citrus pruners advocate opening up the trees so that light can get into the centre and fruit will have color and will get ripe. Some try to leave windows on four sides of the tree for the same purpose, but this is poor economy for wherever this is done, a box of fruit will be removed from the exterior of the tree to get one-half box in the interior. A very light thinning out wherever necessary will serve the same purpose, and removing dead brush will help.

Many growers have been told that **so-called sucker wood**

is of no value, that it draws upon the rest of the tree and will not produce fruit. It has been found that such wood is an advantage to the tree, in that it is Nature's way of rebuilding the tree, and after a year or so such wood usually produces good fruit. It has been found that the heavier the pruning, the less the production. This is particularly true on young trees.

The pruners in the San Joaquin

Valley generally cut less than in other parts of California. This has been due to the fear of sunburn. It is also true that in the hotter valleys the wood is much more brittle.

Looks should not be the deciding factor in pruning. Looks don't count, it's the money we get out of the crop year after year that spells success for citrus growers.

When sucker growth can be used, use it. Thin out the wood where it is thickest. Don't prune until the trees are fully dormant, November (May in Australia), is too early. Cross limbs need not be cut out unless they interfere with those forming the main framework of the tree. Many times a cross limb is cut-out at the expense of a box of fruit for the next three or four years.

The citrus growers are pruning better now than they did a few years ago. Many are still pruning too much. Many times a pruner will do enough unnecessary pruning in an orchard so that it will take at least five years to bring the production back to where it should be.

GUMMING OF LEMONS.

Treatment of Affected Trees.

A type of gumming or collar rot of citrus trees, with which a fungus (*Phomopsis* sp.) is associated has been more common than usual during the present dry season. It is particularly common on old Lemons, writes an officer of the Biological Branch of the N.S.W. Department of Agriculture, but it also attacks young Lemons and Oranges.

Patches of bark on the trunk are killed, and often large quantities of gum are exuded. Infection usually starts at the soil level and works upward and around the trunk. It is not

uncommon to find isolated diseased areas of bark on the limbs also, but the rough Lemon roots are resistant to the disease and are seldom attacked. The fungus parasite grows slowly, but will eventually often ring-bark the trees if left unchecked.

Removed Diseased Bark.

Treatment consists of the removal of all the darkened diseased bark, together with one or two inches of the apparently healthy bark all around on the edges of the diseased area.

It is important that the whole of the diseased tissue, particularly at the edges, be removed. This is best done by making vertical cuts into the diseased bark with a heavy knife, inserting the knife blade between the bark and the wood, and thus removing the bark in long strips. The bark will be found to peel off more or less readily, according to the sap flow.

It will be found that, except in the centre of old lesions, the disease is confined to the outer bark, and that the wound is readily cleaned up by removing the bark in this manner. A quantity of yellow gum usually occurs at the junction of wood and bark, and extends in a zone from a few to several inches wide around the diseased area. The fungus is not present in this gum zone, and there is no necessity to remove the bark above it.

Bordeaux paste or paint

is effective for the painting of the wound after the bark has been removed, but in recent experiments a Stockholm tar compound has given very good results. The preparation is not a fungicide, but has the advantage of not causing any injury to the exposed healthy tissue, with the result that new bark is formed almost at once over the whole of the wound surface. It is especially to be recommended where the gumming has involved a large area of the trunk.

Inarching.

If it is desired to save a tree in which say half or more of the trunk has been girdled, inarching may be combined with the above treatment. For this, one or two young stocks are planted close to the trunk of the tree most affected, and grafted into the healthy bark above the wound.

Once the disease has been cleaned up, it is relatively easy to keep it in check by regular treatment. The general practice in some orchards is to make a routine inspection of the trunks every one or two months and to treat any new gumming areas at once. Affected trees usually benefit from a light pruning and the application of a little extra nitrogenous fertiliser.

CITRUS BROWN ROT.

According to Farm Advisor Rounds, in many districts of Los Angeles brown rot is showing on Oranges. In some instances Navels are affected, but this year Valencia's especially are showing the infection. No reports have been received of infection in orchards sprayed with Bordeaux mixture. Apparently conditions were ideal for brown rot following the rains of last month.

Fruits now affected cannot be cured, but if the situation is severe, the growers may, by spraying at once, eliminate further spread of the disease. In case of cool, damp weather during January, this effort might be advisable. The spray to use is one composed of three pounds of bluestone and three pounds of lime, to 50 gallons of water, applied to the lower parts of the tree and ground. Proprietary materials may be purchased which are ready to mix with water.

Control of Citrus Pests.—The article in our last issue on pages 57 and 58 was compiled by Mr. W. H. Murray, of the Vacuum Oil Co., but, through the moving of the type, was not acknowledged last month.

ADVERTISING AND MARKETING.

Some Home Truths.

The following extracts are from the address of Mr. Don Francisco, before the American Institute of Co-operation, on the subject of "Advertising and Marketing." The extracts are from the "Western Canner and Packer."

Demand and supply are the two factors that determine the prices of orchard products. To dispose of rapidly increasing yields, it is essential to attract new customers and induce old customers to consume more of our products. This can be done by judicious advertising. The problem of a large and abrupt increase in production, however, cannot alone be solved by advertising. Advertising can help and prepare the market to receive part and perhaps all of the big increase in production, but the genuine remedy for over-production is—reduction of output. Over-production, however, cannot be definitely known to exist until every effort has been made to increase consumption and absorb supply.

Thousands of pounds would be saved if crops were not planted on land patently unsuitable, and more money

would flow back to orchardists if low-grade products were never marketed.

If the product is not satisfactory to the consumer, advertising only turns the searchlight on a poor product, and its trade mark becomes the buyer's danger signal. Standardisation should always precede advertising.

STAGGERING LOSSES.

£40,000,000 Damage by Insect Pests Annually in U.S.A.

Plant Diseases Are as Bad.

The losses caused by insect pests in U.S.A. are officially estimated to exceed 2,000,000,000 dollars (£40,000,000) annually, nullifying the labor of 1,000,000 men and destroying from one tenth to one-fifth of the crops.

Plant diseases are reckoned to cause almost similar losses. Smuts destroy 100,000,000 bushels of grain; rusts destroy even more than this.

DANGEROUS ORCHARD PEST.

"Spitfire" Beetle.

While Mr. J. Eden, of Coraki (N.S.W.), was removing a yellow beetle from an Orange tree leaf a few days ago, the insect ejected a stream of fluid, which went into one of the man's eyes. Suffering terrible pain, he was under medical attention for over a week. It is believed that the insect was a bombardier beetle, genus *Brachinus*, which is known to discharge a pungent acrid fluid from the glands at the rear of the body, and which is irritating even to the bare skin.—"Farmer & Settler."

Citrus trees are making heavy demands on the soil just now. Apply fertilisers, and work them into the soil around the outer circumference of the trees.

Pick and pack Apples and Pears for local market and export with great care.

The coming season's blossom buds are now forming. Conserve soil moisture by removing weeds and maintaining a soil mulch.

Kindness is the golden chain by which society is bound together.—Goethe.

* * *

We should often be ashamed of our best actions if the world were witness of the motives that produced them.—Rochefcauld.

Dried Fruit Notes.

Australia . . . California

VICTORIAN DRIED FRUITS BOARD.

The Victorian Dried Fruits Board was constituted under the Dried Fruits Act 1924, No. 3380. It consists of five members—two Government nominees (one of whom shall be Chairman), and three growers' representatives elected by the preferential vote of the dried vine fruit growers throughout the State. The present members of the Board are the Government nominees, Mr. J. M. Balfour, Chairman, and Mr. E. Meeking; growers' members, Messrs. E. T. Henderson, A. S. Lochhead and S. R. Mansell, all of Mildura.

The Board controls the Victorian production of dried Currants, dried Sultanas and dried Lexias. Its principal function is to prescribe the proportion of each year's crop, which shall be exported overseas, and the proportion which shall be marketed within the Commonwealth. The Board also has important functions in regard to supervision of the processing of fruit in dried fruits packing sheds, and the conditions under which it shall be packed and marketed. During the season, inspectors are stationed in all packing sheds and scrutinise the quality of all fruit delivered by growers.

Advertising publicity for the purpose of increasing the Australian consumption of dried vine fruits is also undertaken by the Board.

The Victorian Dried Fruits Board is also a "prescribed authority" under the Commonwealth Dried Fruits Act 1928, and, in that capacity, controls the transport interstate of dried vine fruits.

During 1928 season (which was a comparatively small pack, owing to frost in September, 1927), the Victorian crop was:—

Currants, 3,517 tons; Sultanas, 16,458 tons; Lexias, 3,557 tons. Total, 23,532 tons.

The following quantities were shipped to overseas markets (up to January 31, 1929):—

Destination.	Currants. Tons.	Sultanas. Tons.	Lexias. Tons.	Total. Tons.
United Kingdom	36	9,743	1,681	11,460
Canada	1,193	613	83	1,889
New Zealand	472	1,142	1	1,615
Africa	53	—	—	53
India and other Eastern ports . .	138	116	19	273
Miscellaneous	4	4	—	8
	1,896	11,618	1,784	15,298

DRIED FRUIT SITUATION.

What is Happening in California?

As Australia has entered the export field so definitely with dried vine fruits, it is of great interest and importance to note what is happening in other countries, particularly as regards Raisins, in California.

The broad facts appear to be that there are more dried fruits produced in the world than can so far be profitably marketed. This was pointed out in the recent report of the Development and Migration Commission. Australia's Sultanas, however, are a superior product, and command attention accordingly in our principal export market, Great Britain.

There is over production of dried fruits in California, just as there is over production in Australia.

We must endeavor to find the facts of the situation, for on this alone can proper conclusions be drawn. Statements recently published in some sections of the Australian press dealing with the "collapse" of the Sun-Maid Raisin Organisation, in California, do not appear to be borne out. We must be careful about accepting all information from California, as the Growers' Association has some strong commercial competitors who have their own way of presenting information. One Californian paper in particular, not infrequently quoted here, is the organ of the independent packers, and is anti Sun-Maid.

Over-production in California was brought about by land booming, and the mistaken idea that prohibition would provide a practically unlimited market for Grapes. This differs from the over-production problem in Australia, which was brought about by Governmental action. The peak of production in California is now considered to be past, and "marginal" vineyards—those on inferior soils, etc.—are being rooted out.

Prospectuses of land-selling companies are being checked up by an independent body, and refuted where necessary.

A new phase in Grape marketing was entered upon when powerful business organisations decided to assist the stabilisation of the industry, the idea being to sell a maximum quantity of fresh Grapes, so as to reduce the quantity to be dried. The co-operating factors were the Sun-Maid Organisation, Californian Development Association, the railroad, electric light, telephone companies, etc. (the last three mentioned being joint stock companies, and not government owned, as in Australia).

A highly qualified man, Mr. Donald Conn, was guaranteed a substantial salary for five years to organise the Grape distribution. Mr. Conn is an expert in transport and organisation. Californian Vineyardists' Association was thus launched, and a big drive was conducted for a comprehensive membership.

It will thus be noted that the C.V.A., while necessarily interested in the dried fruits aspect, has a bigger task in co-ordinating the railrage and distribution of fresh Grapes.

In his address before the recent Annual Convention of Californian Fruitgrowers held at Riverside, Mr. Harry M. Creech, general manager of Sun-Maid, spoke of three factors affecting their organisation: (1) The emotional aspect; (2) the economic aspect and (3) the business aspect. The emotional—when growers were thrown into confusion by the published doctrines of despair, causing them to sell at unjustified prices; the economic aspect, showing the five-year average production of 250,000 tons, the absorption of 300,000 tons (including portion of the carry-over) in 1928, by vigorous propaganda in U.S.A., and by increased exports. Mr. Creech continues: "For the fiscal year of 1921, the United States imported 46,725 tons of Raisins and Currants, and in the same year exported 12,246 tons, or a net adverse trade balance of about 34,000 tons. During the fiscal year just closed, the U.S. imported only 6,426 tons, and during the interval, exports had increased gradually from 12,000 tons to 96,549 tons, a favorable trade balance of more than 90,000 tons or a net gain in foreign Raisin trade exceeding 120,000 tons. . . . This export figure approximates California's production in 1915. This gain is without substantial sacrifice of sound prices, since the extremely low prices of recent months played no significant part in the long term figures."

Sun-Maid, handling 160,000 tons, is

the biggest factor in the Californian Raisin situation. Regarding the business aspect, Mr. Creech continues: "Competition exists between packers in selling to the trade; over competition destroys values. Sun-Maid has made this competition orderly and wholesome without destroying its vitality. Commercial packers with their capital invested in the industry, have their place just as Sun-Maid has. To-day Sun-Maid and the Commercial packers are working together with increasing cohesion. Sun-Maid is co-operating with the Prune and Apricot Growers' Association, the Peach and Fig Growers' Association, selling their products under the Sun-Maid brand."

"Sun-Maid's present financial situation is being worked out without loss or unjust burden to anyone, and forecasts substantial profit to those growers who remain a part of Sun-Maid's basic foundation."

The "Pacific Rural Press" states on November 24, 1928: "Sun-Maid business is functioning efficiently at last, and is being capably managed. The independent packers no longer speak of inefficiency. . . . Meanwhile the price of Raisins is going up slowly but surely."

In a recent issue of the "Crops and Markets Bulletin" of the Los Angeles Chamber of Commerce—probably the finest organisation of its kind in the world—the following is stated:—

"There has been a lot of unwarranted noise about the 'dire distress' of the Californian fruit industry. It is true that we are not in a most advantageous position, and that some lines are just plain headaches, but it seems to us that we have made some definite and constructive progress toward the solution of our problems. We have at least learned what our problems are, and that is half the battle won."

Dried Fruits Boards are operating in Victoria, N.S.W., S. Australia, and Western Australia.

Good reports are to hand from grocers who have used the Showell process for ridding dried fruit of grubs. The process is being carefully investigated.

A thankful heart finds roses amid the thorns, and rejoices. The unthankful heart finds thorns among the roses, and complains.—Miller.

New Zealand

Crop Reports : District Notes

THE chief fruits grown in the Nelson district (writes Mr. C. Higgs, of Mapua, on Dec. 26, 1928), are Apples and Pears. Altogether there is 8,000 acres growing fruit in the Nelson area, most of which is devoted to Apples. The heaviest plantings are Sturmer, Jonathan and Delicious. Other varieties grown are Cox's, Dunn's, Doherty, Statesman, Ballarats, and a few odd varieties, such as Granny Smith, Cleopatra, etc. The varieties of Pears grown are:—Winter Coles, Kieffer, W.B.C., Winter Nelis, and a few other sorts in small numbers.

Continuing, Mr. Higgs writes:—The province is divided into three separate fruitgrowing districts, i.e., Stoke, Moutere Hills, and Riwaka. The Moutere Hills produce very high colored fruit, being grown on poor land, sloping to the sun. The orchards which have received proper manuring, spraying, and cultivation are producing very fine crops, many growers exporting 80 per cent. to 90 per cent. of their crop. The Riwaka and Stoke land is flat; the former is very rich river silt; the latter is inclined to be gravelly, and does not stand dry seasons as well as the Hills or Riwaka.

Crop Prospects.—Apples: Generally speaking, about 25 per cent. less than last year, though many growers have heavier crops than last year. Delicious, generally light, but fruit will be large. Jonathans, light. Dunn's and Sturmer's heavy. Cox's medium. A great deal of dropping still going on in Cox's. My experience is that they are very sensitive to combined sprays, such as lime-sulphur and arsenate of lead, and it is much safer to cut out L.S. after the pink, and use sulphur paste, or sulphur combined with spreader; this can be safely used with lead.

The crops throughout the province are very free of spot. A few orchards suffered from hail recently, but not to any great extent. We have had a lot of rain this month.

The letter you published in September relating to stationery spraying plants caused some interest among your Australian readers, for I have had several letters, asking for further particulars.

Stationary Spray Plant.

I may say that the stationary plant is a great success, and in my opinion

will entirely supersede the portable outfit. One of the great advantages is that with a good outfit, four hoses can be kept going at high pressure, and the job can be put through in quick time, as there is no time lost driving back to water holes to fill up.

From your last number, I gather that the Apple crops in Australian States except W.A. are very light this year.

Organisation in N.Z.

It seems to me that the N.Z. fruit-grower is in a much better position than in Australia or Tasmania. Here, we have a splendid organisation in our Fruitgrowers' Federation, under the capable management of Mr. E. Napier, and board of directors; also our N.Z. Export Control Board is of very great assistance to us. All we have to do is to notify the board what quantity of fruit we expect to ship on approximate dates, and they arrange shipping space, insurances, local freight, wharfages, cool storage, etc., and the advances. The board's English representative has just left for England. There, he distributes the fruit to such markets and brokers as he thinks fit. The Federation supply cases (Canadian), nails, straw boards, wrapping paper, labels, also spray pumps, hose, and all spray material, at very cheap rates, and payment for the season's requirements is made out of the export advances, spread over the season, without interest.

No grower is allowed to make any sales, F.O.B. or otherwise, outside of the Control Board. Generally speaking, growers are quite satisfied to leave the marketing of their fruit to the board. But, of course, there are a few disgruntled ones, who can't see further ahead than their noses, who, when some firm or other anxious to get hold of some N.Z. fruit, puts up a tempting offer for one season, would like to accept same, and so put in the thin end of the wedge to break up our organisation, and eventually leave us to the tender mercies of the speculator, who at the moment is willing to give a fictitious price for our fruit, knowing full well that any loss incurred this season will be recovered many times over in years to come. We would like to see the

Australian growers with an organisation such as we have in N.Z. It would then be possible to come to some arrangement of the exports, so that shipments from both countries would be sent to the places where the best prices could be obtained, without clashing with each other. I would like to have some of your growers' opinions on these matters. With best wishes to all Australian growers for 1929.

Yours, etc.,

Chas. Higgs.

Mapua, Nelson, N.Z., 26/12/28.

Marlborough.

(1) The principal fruits and varieties grown in the Marlborough district are:—

Apples—Delicious, Sturmers, Jonathan, Cox's Orange, Dunn's, Ballarat Seedling, Statesman, Cleopatra, Rokewood, Shorland Queen, Rome Beauty, and Newtown Pippin.

Pears—Winter Cole, Winter Nelis, W.B.C., P. Barry, Buerre Bose, and Easter Buerre.

Peaches—Brigg's Red May, Hales, Million Dollar, Golden Queen, Wiggins, and Gold Dust.

Nectarines—Gold mine, and Early Rivers.

Apricots—Moor park, Roxburgh Large Red, and Oullins Early.

Plums—Burbank, Wright's Early, October Purple and Greengage.

There are approximately 473 acres in commercial orchards in this district.

(2) The crops are promising well for the coming season, although certain varieties of Apples are light. The approximate output for the coming season should be 60,000 cases.

(3) The crop is showing very little disease at the moment, and should

compare quite favorably with that of last season.

There are two stationary spray plants in this district owned by Mr. C. Ivory and Robert Dowker, respectively. There are also two cutler fruit sizing machines, one owned by the Messrs. Ivory Bros., the other by R. Dowker. In answer to a letter requesting information from the Marlborough district Mr. R. Dowker writes:—"I find these 'Cutler' machines very satisfactory and up-to-date. There is just one drawback with them, and that is, fruit of the same variety picked in different parts of the orchard weigh differently, although having the same diameter.

"I have an eight acre block of Apples and a few Pears, from which were packed 4,300 cases (bushel) this last season; a cover crop of blue lupins is sown each January; we get a good growth of same, about 4 ft. The ground is kept well cultivated until then. I also dig under all trees and keep them hoed through the season. All kinds of fertilisers have been tried on different rows and varieties of Apples. This has been given up, no beneficial effects being noticeable.

"We have a fruitgrowers' Association in Marlborough, Mr. J. W. Doggett, of "Springlands," Blenheim, being Secretary, and Mr. T. Terode, of "Fairhall," Marlborough, acting as President.

Western Australia.

Record Export Season.

There is much activity in connection with the export trade in fresh fruit. The Apple crop developed satisfactorily, the fruit being of excellent quality. Growers are exercising all care to put up even packs of good

quality to maintain the reputation which that State enjoys.

Fruit is being shipped from Fremantle and Albany.

Messrs. Paterson & Co., Perth, advise that the Western Australian shipping programme to date (February 26) is as follows:—

March—	Cases.
4—Port Huon, Hamburg	58,000
6—Jervis Bay, London	13,000
6-7—Idomeneus, Hamburg	44,000
11—Otranto, London ..	4,000
15—Port Dunedin, Hamburg-Stockholm ..	85,000
18—Horatius, Hamburg	53,000
18—Maloja, London ..	3,000
18-19—Barrabool, London	30,000
25—Ormonde, London ..	4,000
28—Port Bowen, Hamburg-Stockholm ..	79,000
April—	
2—Orestes, Hamburg ..	44,000
2-3—City of Winchester, Hamburg	36,000
3—Largs Bay, London	13,000
11—Ceramic, London ..	31,000
13—Port Brisbane, Hamburg	62,000
	<hr/> 559,000

The Secretary for Western Australian Railways advises that the tonnage of fruit and vegetables handled on the W.A. railway system for 1927 and 1928 was as follows:—

Jan. to Dec., 1927	67,150 tons
Jan. to Dec., 1928	53,078 tons
The fruit received in the metropolitan area for the same period was:—	
Jan. to Dec., 1927 ..	439,802 cases
Jan. to Dec., 1928 ..	344,803 cases

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New South Wales

Federation Meeting . . . Prune Growers Meeting
District Reports and Cultural Hints.

FRUITGROWERS' FEDERATION OF NEW SOUTH WALES.

A meeting of the Board of the Fruitgrowers' Federation of N.S.W. was held at Sydney on February 8.

Present.—General J. Heane (in the chair), Messrs. H. G. Such (Griffith), A. U. Tonking (Orange), F. Helson (Leeton), T. A. Tester (Young), J. Brann (Albury), A. J. Taylor (Singleton), H. S. Wark (Bathurst), T. C. Morrison (Gosford), R. Hill (Narara), A. F. Dunstan (Sackville), W. W. Challis (Kentucky), R. Lowe (Lower Portland), E. E. Herrod (Secretary), G. H. Wilson (Organiser).

Organising.—The organiser submitted a report covering the period since the last meeting of the Board. This included finalising of work in the Camden district and commencing of work in the hills district. Since the last meeting, the following organisations have become affiliated:—Arcadia Fruitgrowers' Association, Annangrove Progress Association, Aylmerton Agricultural Bureau, Dural Fruitgrowers' Association, Galston A. and H. Association, Kenthurst Parents' and Citizens' Association, Mt. Hunter Agricultural Bureau, St. Ives Progress Association.

Farm Produce Agents' Act.—Consideration was given to amendments of the Farm Produce Agents' Act, desired by the Federation, and in anticipation of an amending Bill being introduced in Parliament, it was decided to circularise Members of Parliament with a view to obtaining their support to any amendments which may be introduced likely to improve the Act from the producers' point of view.

Citrus Grading Regulations.—A proposal for the amendment of the "special" grade, by including an allowance for "tolerance," under which all fruit in this grade should be allowed to carry slight blemishes over 2½ per cent. of the superficial area which was adopted at the last Annual Conference, and submitted to the Government for approval, was further discussed in view of a decision that an amendment could not be made owing to the desire for uni-

formity of grading regulations throughout the States. It was reported to the meeting that a recent meeting of the Federal Citrus Council having now approved of the Federation's proposals in this regard, the objection raised by the Government might now be waived, and it was decided to make further representations to obtain the further amendment.

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out England and Continent.

Citrus Show.—Further consideration was given to a proposal previously under consideration, under which the Royal Agricultural Society should be asked to stage an Annual Citrus Show, as an adjunct to the Annual Sheep Show. It had been pointed out that owing to the Sheep Show being held at the latter end of

June, the time of year was not entirely suitable to the staging of attractive exhibits, but the matter came up for further consideration as a result of correspondence from the Department of Agriculture, pointing to the possibility of the time being reasonably suitable. After discussion it was decided to request the Citrus Association to obtain an expression of opinion and to act in accordance with a consensus of opinion in regard to the suitability of the date.

Fruit Marketing Committee.

The Secretary reported further sittings of the Fruit Marketing Committee.

Californian Citrus Case.—It was decided to request the Federal Government to include the citrus export case (known generally as the Californian citrus case), having a measurement of 24 x 11½ x 11½, amongst the cases in which citrus may be exported, and to delete from the present regulations the case which is now gazetted measuring 23 x 11-2/5ths x 11-2/5ths.

Synthetic Fertilisers.—It was decided to support an application being made to have the import duty on synthetic fertilisers reduced.

Health Exhibition.—A detailed report in regard to the Health Exhibition was considered. It was agreed that the Federation's participation in the Exhibition was fully justified by the results obtained.

Publicity.—Consideration was given to the erection of a sign on the Central Railway Station, advocating the more extensive consumption of fruit and authority was given for the preparation of a suitable design.

A report was dealt with indicating the beneficial effect of the publicity given by the Federation towards relieving the soft fruit market position.

Rough Handling of Fruit.—The question of rough handling of fruit was discussed, and it was decided that it would be advantageous to the industry if similar powers existed in this State as now exists in Victoria and Tasmania, under which rough handling is considered an offence.

Retail Stores.—In regard to recent efforts to secure approval for an additional number of permanent barrow stands owing to the reduced number of fruit shops in the city, attention was directed to a substantial increase recently in the number of open shops now retailing fruit.

Hail Insurance.—This matter was discussed as a result of correspondence received from Armidale, and the Secretary reported that the Development and Migration Commission was at the present time engaged on inquiries. It was reported that efforts made previously to establish

some form of hail insurance had failed owing to a number of difficulties, but it was decided to ascertain if the inquiries being made by the Development and Migration Commission were yet finalised.

Annual Conference.—It was decided to hold the Annual Conference on the 12th, 13th and 14th June.

In regard to annual district conferences, the Secretary was instructed to arrange suitable dates for these conferences after consultation with the district representatives.

Organiser.—It was decided to retain the services of the organiser till the end of June, on which date it is anticipated the present programme will be completed.

PRUNE GROWERS' ASSOCIATION OF N.S.W.

Californian Competition Discussed.

A meeting of the Executive of the Prune Growers' Association of N.S.W. was held at Sydney in January. Mr. J. M. Dixon presided, and there were also present, Messrs. J. Thompson, E. O. Catts, P. C. Cox, A. E. Horne, W. M. Josephson, E. E. Willis, and the Secretary, Mr. E. E. Herrod.

In addition, the following agents also attended: Messrs. H. Hinton (Producers' Distributing Society), and O. E. Saddington (M. Laughlin & Saddington).

Cost of Production.—It was decided that 6.02d. per lb. be accepted as the cost of production. Added costs for processing, boxing, freight and selling commission amounted to 2.33d. per lb.

Stocks on hand were estimated at 120 tons.

Crop Estimates.—The probable tonnage for the 1929 season is as follows:—

	Tons.
Young	600
Koorawatha	40
Irrigation Areas	200
Albury	40
Wagga	30
Other districts	16
Total	920

With increased facilities for sale, optimism was evident in regard to the absorption of the full crop.

Deputation to Customs Minister.—During the meeting a deputation waited on the Minister for Customs, Hon. H. S. Gullett, asking that an

anti-dumping regulation be made to apply to Californian Prunes; alternatively, that there should be total prohibition or a duty of 6d. per lb. The estimated importations were 463 tons. Large areas of Prunes were coming into bearing in Australia.

In reply, the Minister said there was no evidence of dumping. Californian Prunes were sold at a higher price than Australian Prunes. The request for a higher duty had been referred to the Tariff Board.

Canning.—In view of the fact that all imported Californian Prunes were sold in tins, the opinion was expressed that more local Prunes should be canned. Strict grading was imperative.

Prices.—After lengthy discussion, it was decided not to alter the prices at present.

TO TEST PACKING.

Trial Shipments.

With the object of testing the suitability of cases and wrapping used for export Apples, the N.S.W. Department of Agriculture, in accordance with the recommendation of the Imperial Economic Committee, is forwarding to London, Hull, and Manchester an experimental shipment of Jonathan Apples.

Each consignment will consist of:—

25 1-bushel Canadian cases, packed in ordinary wraps.

25 1-bushel Canadian cases, packed in oiled wraps.

25 1-bushel Australian cases, packed in ordinary wraps.

25 1-bushel Australian cases, packed in oiled wraps.

50 ½-bushel cases, packed in ordinary wraps.

50 ½-bushel cases, packed in oiled wraps.

In addition, a consignment of Pears will be forwarded to the London market, comprising the following varieties:—Winter Cole, Packhams, Glou Moreau, L'Inconnue, Winter Bartlett, Josephine, Beurre de Capiaumont, Winter Nelis, Howell and Beurre Bosc.

It is considered that these varieties should carry successfully, and they will all ripen at about the same time. In view of the large areas planted to the varieties named, the results of this trial shipment should greatly assist growers in determining their popularity on the English market and the best methods of shipping,

Capertee.

The principal fruits grown at Brooklyn, Capertee, N.S.W., writes Mr. R. Sim, are Apples and Pears. There are about 300 acres growing fruit, three-parts of which are producing Apples, and the remainder Pears.

The varieties grown are:—Apples: Jonathan, Granny Smith, Romes and Five Crowns. Pears: W.B.C., Coles, W. Nelis, Keiffers and Packhams.

The Apple crop this season will be very light, less than 50 per cent. of last year's crop, but there will be a medium to heavy crop of Pears of all varieties.

A Hardie power sprayer has been installed at Brooklyn. It is mounted



Power sprayer at Sim Bros.' orchard, Capertee, N.S.W.

on a motor truck, and is working two guns. The new sprayer has proved successful, and is a great labor-saver. The sprayer is more expeditious and thorough in its work, and much time and walking is saved as compared with the old methods. The spray tank holds 160 gallons, and at 300 lbs. pressure serves a bigger area than our previous spraying methods. The truck, which is fitted with pneumatic tyres, negotiates the ploughed land easily.

ORCHARD TAX.

Success in New Zealand and New South Wales.

By means of an orchard tax of 1/- per acre, fruitgrowers in New South Wales have secured substantial benefits. The Fruitgrowers' Federation of N.S.W. is now firmly established, and is well managed by a Board of Directors, with Colonel E. E. Herrod as Secretary.

In New Zealand the foundation for the highly successful N.Z. Fruitgrowers' Federation was the Orchard Tax of 1/- per acre.

Orchard Notes for March

Green Manure Crops and Cultivation.

WHERE crops for green manure were sown in districts that shared in the February rains, a good start should be assured. However, it should be remembered that even in districts which normally have a copious rainfall, there has been a prolonged dry period which practically exhausted the moisture from deep down in the subsoil, and it will require repeated soaking rains during the fall or winter to make up these reserves. If these should not occur, it would be wise to plough under any green crops, even should they be only partly grown by mid-winter, for if a dry winter is followed by a dry spring, the trees will be taxed sufficiently without any competition for moisture from a cover crop, either sown or volunteer. Of course, where water for irrigation is available, soil moisture is under the grower's control, and green crops can be allowed to remain until July.

It is not too late to sow green manure crops during March in some districts, but considering the exhaustion of subsoil moisture that has occurred during this summer, and the uncertainty of having sufficient winter rains to make up this deficiency, it seems wiser not to sow such a crop this season.

Where no green manure crop is growing, an effort should be made to carry out an early fall ploughing—in fact, if possible a start could be made at once on all beds of trees that have been picked, and each bed similarly treated as picking is completed. Ploughing puts the soil in a suitable condition to absorb any rain that falls, and will thus assist in regaining moisture reserves in the subsoil.

Preparation for Planting.

Where it is intended to plant a new area, it is an advantage to plough and subsoil, leaving the surface in a rough state some months before planting, as then it can be depended on to be in moist enough condition to receive the trees at any time desired during the deciduous planting season.

It is not too late in the warmer coastal districts where severe frosts are not experienced, to plant citrus trees during the early part of this month.

Harvesting.

Apple and Pear growers will be busy this month getting their fruit

away. The later Peaches, mainly cling-stones, will be coming in. As the canneries are only taking comparatively limited quantities, much of this fruit will be marketed fresh.

Drying of Prunes, Sultanas, and Lexias.

Prunes, sultanas, and lexias will be ready for drying. During the past few years, the cold dip for sultanas has been extensively tried in this and other States. The claim made for the cold dip was that a better and more even-colored sample could be obtained by its use, provided no damaged fruit was treated. Though this may have been obtained, the cold dip involves more handling, which puts up the cost of production considerably. The fruit also takes longer to dry than when treated by the old hot caustic soda dip method. The disadvantages of this prolonged drying are particularly felt in wet seasons, and though the cold dip may be suitable in countries where the Grape harvesting season can be depended on to remain dry, it is a risky process to adopt in some of the raisin districts of this State.

Of recent years, certain modifications have been made to the old hot caustic soda dip. The temperature has been reduced from boiling point to 192 to 196 deg. Fah. A very short immersion is given, and the fruit is passed through the dip as quickly as possible. The strength of the dip should be sufficient to remove the waxy covering of the Grape during the short immersion in the dip at this reduced temperature; slight cracking of the skin of the berry is not necessary. The desired strength is generally obtained by using the caustic soda at the rate of about 1 lb. to 25 gallons of water, but the exact strength can only be arrived at by trial. The dipping tins should be liberally perforated to allow the dip to get away instantaneously from the fruit as it is withdrawn from the dip. The fruit should not be allowed to remain in the tins after dipping for any length of time, but should be spread as soon as practicable.

Large bunches should be divided into sections before dipping, both to allow the dip to penetrate quickly and afterwards to hasten drying. Likewise, the fruit should not be spread too thickly on the rack. The dip should be kept skimmed of any scum, and should be renewed after a fair quantity of fruit has been through, otherwise it will become dirty and dry in globules on the fruit.

To obtain a weighty, good quality, meaty, dried product, the Grapes

should be fully ripe. Their maximum sugar content is reached some days after they have reached a palatable state to eat fresh. In order not to lose good drying weather, picking is generally started before the maximum sugar content is reached, but should not be started before the must registers 13 degrees Baume. During the early stage of drying, if hot weather prevails (say, 90 degrees or over in the shade), the sun should not be allowed to shine on the fruit, and the hessian curtains should be used on the side of the rack necessary to prevent this.

As with the case of the cold dip, the modified hot caustic soda dip should not be employed for damaged fruit. The modified dip prolongs the period of drying, hence if bad weather prevails during the Grape drying season, the old hot dip should be resorted to.

Great care should be taken that the fruit is properly dried before it is removed from the rack, as if disturbed before, much fruit will be broken and the color of the whole spoilt.

Pests.

Citrus Scale.—The February rains will have revived the citrus trees in the coastal districts, which will allow treatment for scale insects to proceed. Leaflets on fumigation of citrus trees are obtainable free from the Department of Agriculture.

Codlin Moth.—During the rush of picking and packing, Apple and Pear growers are tempted to neglect the codlin moth. This is a short-sighted policy, for although neglect at this period may not apparently affect this year's crop, it will certainly increase infection next season.—C. G. Savage and W. le Gay Brereton, in N.S.W. Agricultural Gazette.

THE COW'S FAULT.

An Irish labourer, new to the work, was ploughing, and as the furrows were very uneven, the farmer told him to look at something at the other end of the field as a guide.

"That cow by the gate," he said, "is right opposite us. Now work straight for her."

"Right you are, sorr," said Pat.

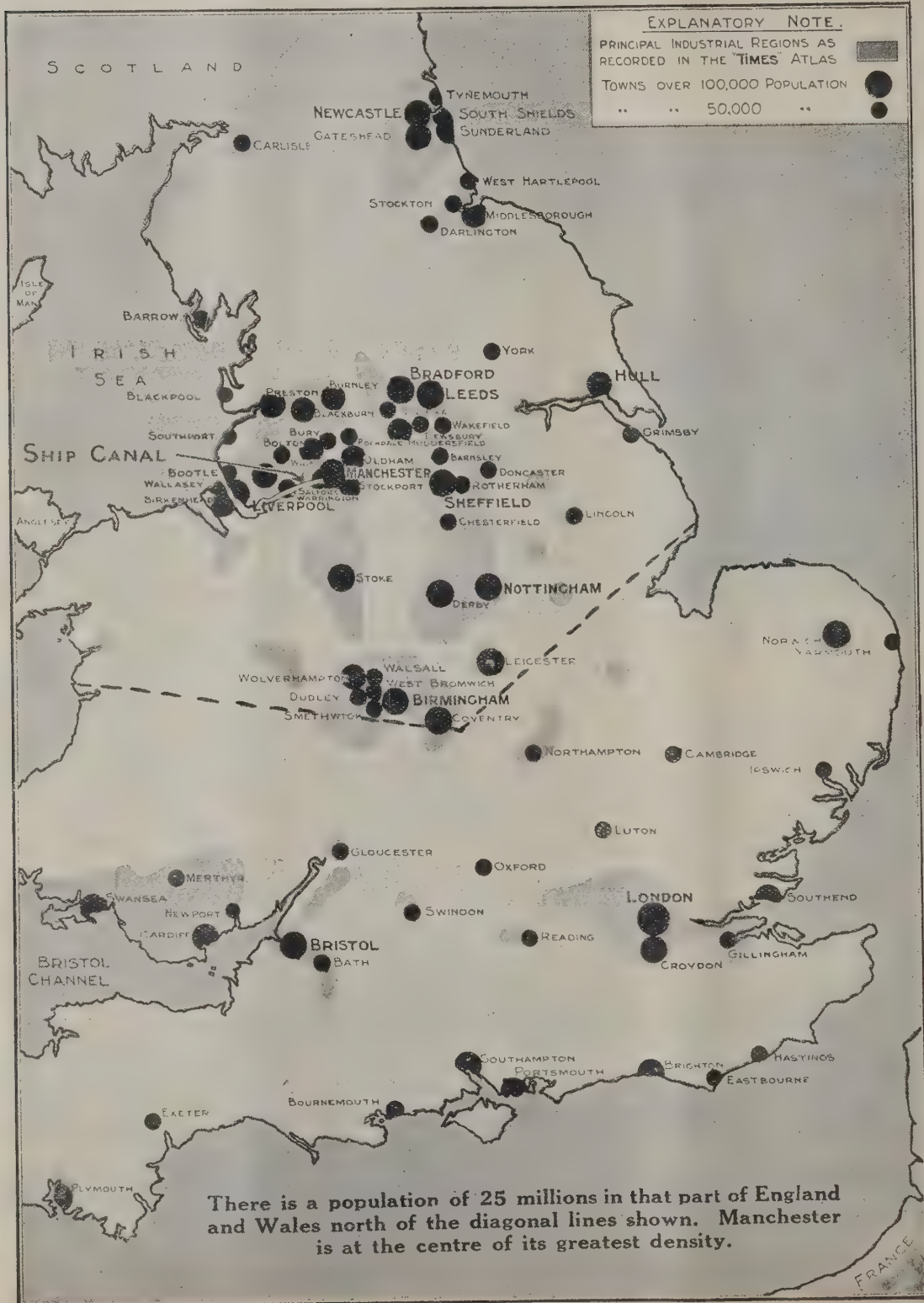
Coming back later on, the farmer was annoyed to find that the plough had been travelling zig-zag all over the field.

"What's the meaning of this?" he demanded. "What have you been doing?"

"Shure, sorr!" was Pat's reply. "I did what you told me. I worked straight for the cow, but the crayther didn't kape still!"

INDUSTRIAL MAP OF ENGLAND & WALES

SHOWING
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THE PORT OF LONDON.

(The Editor, "The Fruit World.")

Sir,—

In recent press reports concerning the arrival at Fremantle of representatives of the Port of London

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ALBERT HOUSE,
BRISBANE.

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Authority, who are touring Australia and New Zealand "to make better known the marketing and distributing facilities of the Port of London," Mr. Toovey, principal assistant to the general manager, is reported to have said: "As the manufacturing industries in England were gradually drifting to the south, London's advantageous position as an industrial as well as commercial city, was more predominant than ever."

In quoting statistics regarding London's claim to the position of pre-

mier British port, Mr. Toovey is on safe ground, but the same cannot be said (if he is correctly reported) regarding the suggestion underlying the foregoing statement, viz.: that London's economic position as a distributing and shipping centre has materially changed during recent years as the result of an alleged southward drift of manufacturing industries.

In 1921, when the last census was taken, the population of the northern and midland counties of England and Wales, was approximately 25,000,000, compared with about 15,000,000 in the south, and it is very doubtful if there has been any material alteration in these proportions up to the present time.

Coal, iron, steel, hardware, cotton, woollen and silk textiles, motors and cycles, leather, lace, hosiery, china and earthenware, cutlery, engineering, chemicals, and in fact, all the principal British industries are located in the area between Coventry and Birmingham in the midlands and Leeds, Bradford and Blackburn in the north; there are numerous cities and towns with populations of 100,000 to 1,000,000 in this densely-populated area measuring about 90 miles from north to south, and carrying some 15,000,000 people.

On the other hand, outside the Greater London area, there are no towns within 60 miles of the capital—except Croydon, Tottenham, and Brighton (the south coast pleasure resort), which have a population of 100,000.

During recent years the geographical advantage of certain northern ports in relation to the principal industrial area, has compelled the Port of London Authority to reduce their port charges on many occasions, and at the present time competitive rates to Yorkshire via northern ports, compel London interests to rebate 14/6 per ton on wool shipped to Yorkshire via London, as an offset towards the higher railrage charges from that port.

The fact is that, so far from the alleged southward drift of industries materially affecting the situation, London is feeling the effects of economic pressure to an increasing extent, because the quantity of imports distributed and manufactured goods shipped via that port is altogether out of proportion to its economic position—having regard to the location of the principal British industries and the distribution of population engaged in them.

Yours faithfully,

Wm. Jno. WADE.

'WARE RUTHERGLEN BUG.

The N.S.W. Department of Agriculture issues a warning to fruit-growers to keep a sharp lookout for the Rutherglen Bug. The pest is difficult to control owing to being resistant to most sprays and the wide area which it infests.

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United Kingdom
and the Continent**

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Correspondence Invited.

H. JONES & CO. LTD.,
HOBART

When the pest is discovered in the grass or weeds on headlands, it is best to burn off, or spray weeds with crude oil or strong kerosene emulsion.

If the bugs get into the trees about picking time, they can be smoked out by lighting heaps of grass or weeds, to which tar has been added to increase the volume of smoke.

Where bugs are found crawling up trunks of fruit trees, the use of sticky material such as "tree tangle-foot" has been found effective.

Nicotine sulphate, black leaf 40, kerosene, or benzole emulsion, will destroy the bugs on the trees, but at the expense of the fruit, which will probably be tainted if the sp is used just before harvesting.

Queensland News.

New Banana Grading Regulations.

Committee of Direction in Conflict with Agricultural Department.

Proposed Control Board Rejected by Growers.

FOLLOWING serious complaint, in Southern markets regarding the poor quality of Bananas from Queensland, the Queensland Department of Agriculture has gazetted new regulations regarding the grading of Bananas.

The new regulations and the suggestions of the Committee of Direction, are set out hereunder, thus:—

Regulation.—Choice, 8 in. long x $4\frac{3}{4}$ in. girth. Standard, $6\frac{1}{2}$ in. long x $4\frac{1}{2}$ in. girth. Plain, $5\frac{1}{2}$ in. long x 4 in. girth.

Suggested.—Sixes, $5\frac{1}{2}$ in. to 7 in. x $3\frac{3}{4}$ in. Sevens, 7 in. to 8 in. x 4 in. Eight, over 8 in. x not under $4\frac{1}{2}$ in.

At a deputation on this subject the Minister for Agriculture (Mr. W. Forgan Smith) rejected the grade suggestions from the Committee of Direction, and said the new regulations should be given a fair trial.

* * *

At the deputation the manager of the Committee of Direction (Mr. W. Ranger) said that grade standards had no significance as consumers purchased absolutely on inspection. The Department had neglected the cultural and packing aspects of the industry.

"Had the Department," Mr. Ranger proceeded, "strictly enforced the minimum grade standard, so that Bananas below a certain size could not be sent to the Southern States, its action would have been whole-heartedly supported by everyone concerned. Its action in gazetting different standards is universally condemned, even by those who have consistently fought for stringent action."

"Fully 50 per cent. of the Queensland production is relegated to the lowest grade, because of this absurd

girth measurement, and Bananas from $5\frac{1}{2}$ in. in length up to 9 in. and over, may be classified together. Further, the change has not been prompted by any knowledge of the quality of the fruit after ripening."

Grades Suggested.

Size only could be truthfully indicated by the grower, and the following grades were suggested:—

Sixes, $5\frac{1}{2}$ in. to 7 in. in length, and not less than $3\frac{3}{4}$ in. in girth.

Sevens, 7 in. to 8 in. in length, and not less than 4 in. in girth.

Eights, over 8 in. in length, and not less than $4\frac{1}{2}$ in. in girth.

The Australian public would be ef-

Cooksley & Co.

(W. P. COOKSLEY)

Reliable Fruit Agents

Over 30 Years Experience

TRY THEM!

Fruit Exchange, Brisbane
QUEENSLAND

Shipping No. 29

Reference: Commercial Banking
Co. of Sydney Ltd.

fectively protected if the suggested standards were enforced, and the grower would not be penalised. The new names for grade standards might be suitable for Apples and Pears, but were unsuitable for Bananas.

Mr. F. Rice (Gympie), Chairman of the Banana Sectional Group Committee, and Mr. H. Citer (Cooran), Secretary of the Group Committee, supported the representations for altered standards.

Minister's Reply.

In reply, the Minister said it was his duty to the people of Queensland to see that industries were developed efficiently. The present duty was tantamount to an embargo, and there was strong agitation for a reduction of the duty when Bananas could be supplied by Fiji, Norfolk Island and Java. The position in the Southern markets had been investigated by the Premier (Mr. McCormack) and himself, personally.

Approximately 75 per cent. of the Bananas sent south, the Minister admitted, were good, but the remaining 25 per cent. left much to be desired. Mixed sizes and incorrect markings, among other defects, had very strongly been revealed to him. The methods of ripening employed in Melbourne, too, were primitive. "I could speak very scathingly," he observed, "of the methods adopted by some of the ripeners." Very much was required to improve the industry, and while legislation had been enacted to make it a white man's industry, a large percentage of the fruit was consigned to Chinese agents and ripeners. In New South Wales, he had found somewhat better conditions prevailing than in Melbourne. In both places, however, he had found high quality Queensland Bananas branded as Fijian Bananas. There was no limit to the market for good fruit; of that he had been readily assured.

"If it is necessary to review the regulations," continued the Minister, "it can be done when that Bill is before the Government. It is my intention, also, to recommend an amendment to the Banana Cultivation Act, which will deal with Banana cultivation, Banana diseases, and generally with many of the problems on which discussion has centred during the past 12 months. But the new size regulations will be given a fair trial."

"Objections Not Answered."

Mr. Ranger held that the objections to the grade designations had not been really answered.

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Batlow Packing House Co-op. Soc. Ltd.

The Minister: I am very definite on that. It is no use indulging in an interminable debate on this matter. If you improve the methods of cultivation and take action to have the Bananas ripened the way they can be ripened, you will not need to bother about grades at all. The fruit would sell on its appearance.

To this Mr. Ranger agreed, but pressed his arguments about the regulations as the position stood.

The Minister: The regulations might be considered drastic because the Committee of Direction failed to discipline its members. Have you ever taken steps to discipline the men who are sending away inferior fruit? There is fruit being sent by your members to the markets that is injuring the interests of every other grower. The charge is made that the quality of the Bananas being sent from Queensland to the people of the west of Australia falls beneath the legitimate requirements of those people. I have not been able to get into your minds the definite responsibility that rests upon you. You have to show to the people of Australia that the continuance of the protective duties is justified.

One way of doing this, he concluded, was to prevent inferior fruit being sent to the southern markets, and to this end the regulations would be given a fair trial.

Stanthorpe Show.

The 1929 Stanthorpe Show drew large crowds and many fine exhibits, the main features of the show being the Apples and Grapes.

The official opening was performed by His Excellency the Governor (Sir John Goodwin), who remarked on the excellence of the exhibits displayed.

There were sections for fruit, floriculture, live stock, preserves, cookery, etc. Included in the fruit section (which was judged by Messrs. F. Chilton, Sydney; D. W. Walker and H. S. Pratt, Stanthorpe), were Apples, Peaches, Pears, Plums, Nectarines, Grapes, etc. In the Apples, Jonathans were the most largely shown, and the prize for a single exhibit was won by Mr. D. G. T. Gow, of Broadwater. Mr. R. G. Wells, of Thulimbah, was awarded the Rowlands' Memorial Cup for the champion case of Apples in the show, with Mr. E. Draheim second. There was extremely close competition in the fruit section, the difference between the prizes being very little.

Mr. F. Chilton, of Sydney, said that owing to the early season, the Stanthorpe Show was unique in exhibiting Apples, Pears and Grapes at their best. The work of the late William Rowlands could be traced in the excellent packing of the case exhibits. A pleasing feature was the small percentage of disease noticed, particularly with regard to fruit fly. Some of the exhibits lost points on grading, which suggested that their appliances were not correct. The exhibits generally, were so good that it made the work of the judges quite difficult.

Montville.

Mr. George C. Brown, of "Craglands," Montville, Queensland, writes under date February 12:—

Citrus is the chief fruit grown, about 250 acres of orchards, comprising half Mandarins and Commons, the balance Valencia Late. The crops are exceedingly light this year, owing to the protracted dry spell from August to December. The trees have blossomed again and the

fruit is selling well, but second crop is not in favor here on account of the fruit-fly.

Although the rainfall was 90 inches to August, the trees suffered severely with the heat and hot north-west winds.

Pineapples are also extensively grown, but are not the major crop; there are about 180 acres in Montville proper. Flaxton and Mapleton also grow quantities of Citrus and Pines. A great advantage is enjoyed by the Pine growers, owing to the altitude, 1,500 feet, the Pineapples ripen three weeks later than the main crop on the low lands, and so enjoy high prices on the Southern market—especially the November crop.

Owing to the huge crop of citrus last year, growers averaged about 2/6 a case, this is not half the cost of production.

PROPOSED BANANA BOARD.

Rejected by Growers.

The ballot on the proposal to constitute a Banana Board under the Primary Producers' Organisation and Marketing Acts has resulted in the proposal being rejected by the growers.

It was announced officially through the Department of Agriculture and Stock, that 3,516 persons were entitled to vote, and that 1,986 had voted. The voting was as follows:—

For a Banana Board	854
Against	1,121

Majority against 267

To have carried the proposal, a three-fifths majority was required. There were 11 informal votes.

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A Useful Suggestion for Australia.

With increasingly heavy crops of Peaches, Americans have turned to methods outside the ordinary marketing channels to dispose of their surplus crops.

One important method is the use of Peaches in the manufacture of ice cream. In order to serve the growers, some highly-trained officers of the Department of Agriculture were set apart to study the subject, and in

Strawberries, and a number of other fruits, large quantities are preserved by barrelling and freezing (so-called cold packing), or by canning, and ice cream and other frozen products containing these fruits, are obtainable almost everywhere throughout the year.

Such methods of preservation for use in ice creams and like products, have been applied to Peaches only in a rather small way, and cream made with preserved Peaches is consequently unknown to a large part of the consuming public. It is well received where it has been introduced, and it is probably that it would prove as popular as creams made with other fruits, such as Strawberry and Pine-apple, if satisfactory supplies of preserved fruit were available to manufacturers and for home ice-cream making.

The report is signed by Mr. C. W. Culpepper, J. S. Caldwell and R. C. Wright, U.S.A., plant physiologists. They quote the experience of Californian investigators who used Clingstones and Freestones in their experiments. In these Californian experiments the canning varieties were deficient in flavor. Freestones of the drying and shipping types, such as Muir, Lovell, Crawford (probably Late Crawford), and Elberta, were superior to the Clingstones in texture and flavor, but were somewhat lacking in the latter respect, as it was necessary to use approximately 20 per cent. by weight of prepared fruit in order to obtain a cream readily recognisable as Peach. Much better results were obtained with soft-fleshed, highly-flavored varieties such as Carman and Strawberry. A moderately satisfactory cream, somewhat lacking in flavor, was obtained by the use of canned Peaches of the solid-pack pie grade, when employed in quantities of 20 per cent. or more, but the addition of a small quantity of Peach flavor was regarded as desirable.

Continuing, the report deals with the preparation of the fruit, handling of canned fruit and frozen fruit, preparation of ice cream, relation of stage of maturity to quality, proportion of fruit and sugar to be used in cream, comparison of varieties. Summarising, investigators state that preservation by freezing results in

slightly better preservation of the fresh fruit flavor, whereas preservation by canning has the advantages of lower cost of production and distribution.

The utilisation of all kinds of fruit in the manufacture of fruit drinks, essences, fruit pulps, for pies, and in many other ways, has engaged the attention of scientists in many of the

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their report they stated that Peach ice cream, made by the addition of well-ripened crushed fruit, was one of the most popular of the fruit creams.

This manufacture is very largely confined to the months in which fresh Peaches are available, and very little ice cream containing this actual fruit is to be found on the market at other seasons. In the case of

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State Departments of Agriculture, Universities and the Bureau of Plant Industry of the U.S. Department of Agriculture.

The cumulative affect, has been to take off the market much fruit that would otherwise have been offered for sale in its fresh form, with disastrous glutting results.

This points the way for similar work to be done in Australia.

NEW PEACH PITTING MACHINE.

The new Peach pitting machine patented in California was recently on view at the engineering works of Messrs. Geo. W. Kelly & Lewis Pty. Ltd., 529 Little Bourke-street, Melbourne. The machine was patented by Mr. A. L. Duncan. Great interest was displayed by the Development and Migration Commission, canning factory managers, and others interested.

The machine is a compact device, taking up only a few feet of space. Each Peach is fed separately by the operator into the machine; a down-

work a girl gets done is surprising. At one cannery girls are averaging 125 boxes per hour with 12 machines, the girls being paid 5½ cents per box as against 16 cents hand-pitting. At a cannery at Modesto, California, one girl did 22 boxes of Phillip's Cling Peaches (47 lb. nett Peaches to the box), in 1 hour. The factory manager at Santa Clara, California, states as follows:—"The workmanship of the pitting is far superior to hand-pitting, and produces a higher percentage of higher grades. This is to be accounted for from the fact that new hands mutilate the fruit and lower the grades, while on the Duncan machine the same girl does high-grade work."

At the request of the Development and Migration Commission, another demonstration of the Duncan Peach pitter will be made from March 5 to 8 inclusive, between the hours of 10 a.m. and 4 p.m., and all interested are invited to attend.

Canned Fruits.

There is much activity at the Australian fruit canneries, and substantial quantities of fruit are being packed—Peaches and Pears now being the major items.

There is a lack of buoyancy in the business, however, due to economic causes. The Victorian Government has some £700,000 invested in co-operative canneries. The accumulated deficit of the Kyabram cannery is £79,000. The Ardmona cannery made a loss of over £40,000 on last year's operations.

A conference was recently called by the Minister for Markets (Hon. T. Paterson), and held at Canberra. The discussions were held in private, not being open to the press.

Regret was expressed by many growers at what they express as the non-representative character of the conference, and a new Association of canning jam and fruitgrowers has been established, the movement having its commencement in the Goulburn Valley.

On the subject of the proposed export bounty, the suggestion has been made that the State Governments should share some of the responsibility previously borne by the Federal Government: i.e., if the bounty be fixed at 1/6 per dozen 30oz. tins of canned Peaches, as it was last year, that the State Governments find at least one-third of the necessary money.

There are certainly difficulties confronting the canned fruit industry in Australia. More fruit is being pro-

cessed than can be consumed locally, and Australia cannot effectively compete on the English market with California.

Yet the success of the irrigation and closer settlement programmes of the State Governments of Victoria in particular are bound up in the success of the industries there created, including, of course, the canned fruit industry.

The Minister for Agriculture in Victoria (Hon. J. W. Pennington) stated recently that there was over-production of Peaches, and that the future of the canned fruits industry depended on the development of overseas markets. No further plantings

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ward motion of about 6 in. cuts the Peach to the stone. A forward motion, still between guide knives, completes the halving process, and automatically a circular cutting motion is introduced, removing the stone, and the two halves of the Peach fall apart, the work being cleanly done and at surprising speed.

Californian users state that the work done by the Duncan pitting machine is considerably better than with hand-pitting, and the amount of

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would be encouraged: meanwhile, growers would probably have to accept a lower price for their fruit. Reductions in the cost of production would assist in securing an export market. It was hoped that in the near future there would be a concentrated effort by all sections of the fruit canning industry to develop these markets.

VICTORIA

Fruit Industry Statistics.

News and Notes.

FROM the figures collected by the Victorian Government Statist (Mr. A. M. Laughton), it will be seen that Victoria grew considerably more fruit in 1927-8 than in 1926-7. The crops in the last-named period were heavily reduced because of thrips and other insect pests.

The table compiled shows that 7,468,343 bushels of large fruits was gathered in 1927-8, as against 3,161,986 in 1926-7. Berry fruits also show a big increase. In 1926-7 there were 6,192 cwts. gathered, while in 1927-8 the figures were 19,321 cwts.

115,123 pounds of nuts were gathered in 1926-7, and 123,233 pounds in 1927-8.

Apples and Pears showed a distinct advance over the previous year, the figures being: Apples, 543,106 bushels in 1926-7, and 3,712,350 in 1927-8; Pears, 500,995 bushels in 1926-7, and 1,058,481 bushels in 1927-8.

All stone fruits (except Apricots) showed increased yields over the previous year. The drop in Apricots was from 440,423 bushels in 1926-7, to 416,277 in 1927-8.

It is interesting to note that there are 216 less fruitgrowers, or rather, persons who grow fruit for profit, in 1928 than in the previous year. In 1926-7 there were 7,425 growers cultivating 81,501 acres, while in 1927-8 there is 79,293 acres cultivated by 7,209 growers.

The citrus returns included in the totals for large fruits are for the years 1925 and '26. There would be

an increase of citrus for 1927-8 if included in the table.

The citrus figures show that 286,216 bushels of Oranges and 131,154 bushels of Lemons were picked in 1925-6, while those of 1926-7 were: Oranges 276,407 bushels, and Lemons 112,570.

* * *

In relation to the foregoing, the question is frequently raised: are the foregoing figures reliable? Is the present method, that of obtaining the information from such growers as respond, sufficient for compiling official returns. In several instances it is believed the crops are greater than the official figures indicate.

Red Hill Show.—The Red Hill Show will be held on Wednesday, March 20. Whittakers' special car service will be leaving Batman-avenue, Melbourne, at 9.30 a.m. There will be first-class agricultural and horticultural exhibits. Entries close on March 18. Further particulars and schedules are obtainable from the Secretary, J. E. Holland, Red Hill.

Croydon Show.

The eighth annual show of the Croydon and District Agricultural and Horticultural Society, will be held at Croydon, Vic., on March 22 and 23. A first-rate programme has been drawn up. The President is Mr. H. L. Tomkins, and the Secretary, Mr. Lindsay Powell, Croydon, from whom schedules and all details may be obtained.

Somerville.—The annual show of the Somerville Fruitgrowers' Horticultural and Agricultural Association will be held on March 13, 1929. The Secretary is Mr. S. S. Gault, Somerville.

Flowers are words which even a baby may understand.—Bishop Cox.

True merit, like the deep river, makes little noise.

You can count the Apples on a tree, but who can count the trees in an Apple.

Probably he who never made a mistake never made anything.—Samuel Smiles.

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Vegetable Garden Notes.

Hints for March.

When setting out young Cabbage plants, it is a good plan to cut the leaves back by half; curtailing the foliage relieves the root functions somewhat, with the result that the plant soon becomes thoroughly established, and new growth quickly follows. If the plants are rather "leggy," set them so that the lower leaves are just above the surface.

Early Cabbage, with their closely enfolding outer leaves, may be planted eighteen inches apart in the row, with the rows two feet apart. Cultivation greatly aids steady growth. Moisture is another essential; in time of drought, copious supplies of water may be given once in four of five days. Occasional light dressings of nitrate of soda will work wonders. Apply after hoeing, and follow with a good watering.

With Cauliflowers the plants will require more fertilisers and culture (in fact, intense culture) than Cabbages, as only those Cauliflowers are really good which are grown quickly.

It is a mistake to have the soil in the seed-bed richer or even as rich as the ground in which the young seedlings are to be transplanted later, as the young plants are liable to be starved after transplantation. This applies chiefly to crops such as Cabbage and Cauliflower.

Plant out Lettuce in a warm situation. Earth up Celery.

Sow Cabbage, Cauliflower, Broccoli, Spinach, Onions, Carrots, Turnips, Broad Beans, and Peas (Day's Early Sunrise) for spring use.

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THE Gembrook Nurseries, established by the late Mr. C. A. Nobelius at Emerald, have been supplying fruit trees to practically every part of the world for over 44 years.

Many difficulties had to be contended with when the nurseries were first started, particularly in regard to transport. In the early days, Mr. Nobelius employed two teams of bullocks, which had to pull waggons over shocking roads to the Narre Warren railway station, a distance of 14 miles. The fruit trees are now loaded straight from the packing into the trucks at the firm's own railway siding.

In addition to fruit trees, the Gembrook Nurseries are now growing quantities of ornamental trees and shrubs. Within the last twelve months provision has been made to develop this business on a larger scale. Seed frames and a large bush house have been installed.

Notwithstanding the conditions existing, Mr. Cliff Nobelius, the nursery manager, reports a fair demand for fruit trees. The stock of Apple

trees at the nursery at present is a large one. The trees are looking particularly well.

In yearling Apples, the Granny Smith, because of its continued popularity, is grown in quantities, also Jonathan, King David, Rome Beauty, Cleos., London Pippin, Democrat (which is selling well), Munro's Favorite, is being planted in Western Australia.

In two-year-old Apples (all splendid, well-grown trees), Glengyle, Yates, and all the other commercial varieties of Apples were noted. Mr. Nobelius considers one of the best Apples which is not grown much here is Stayman Winesap; it has a beautiful appearance and flavor, and is of the best in America.

Next to Apples, Peaches embrace the largest stock. Some of the best in the dessert varieties are the locally raised Peaches, mostly in Doncaster, including Zerbes, which is a fine early Peach, good cropper, with highly-colored fruit. It is a freestone Peach, fruit early midseason, when Peaches are scarce. Mr. Nobelius considers that there is nothing like it in America, and he sees no reason for the proposal to secure Peach varieties from them for Australia when there are varieties here like Zerbes, Anzac, Pumps, Smith Seed-

ling, Catherin Ann (which was shipped to England with success), and others.

Other good Peaches grown are J. H. Hale, Wiggins, Hale's Early, Mayflower (very early, bringing £1 per case), Elberta, and others, together with clingstone Peaches, such as Pullars, Levis, Phillips, Sims, Tuscan, and Thieles. J. H. Hale is a Peach which should be suitable for shipping because of its firmness and the fact that it is an unusually long keeper. It is also a good canning Peach.

In Pears.—Packham's Triumph, a good all-round Pear, raised by Mr. Packham, of Molong, New South Wales, is grown largely. Other Pears include Beurre Bosc, W.B.C., Winter Cole, Josephine, and others.

In addition to yearling English and Japanese Plums, a large area of two-year-old trees was noted. All the leading varieties are grown, including Coes, Grand Duke, Diamond, President, Burbank, Santa Rosa, Satsuma, Wickson, Wilson, Wright's Early (raised by H. Wright, of New Zealand), and Damsons.

In Prunes.—D'Agen, Robe de Sargeant, Splendour, Sugar, etc.

In other parts of the nursery a good patch of Almonds was noted, the varieties being mainly Brandes' Jordan (which is a well-known variety

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Hardwood or Canadian.**

of strong growth, with very tender shell), Ne Plus Ultra, White Non-pariel, Burbank, and others.

In Nectarines, the chief variety is Goldmine (which originated in the garden of Mr. London, of Parnell, New Zealand). It bears enormous fruit, is a perfect freestone, a beautiful cream color, tender, of most delicious flavor—color bright bronzy red—ripens early in February. Other good varieties are Cardinal, Early Rivers and New Boy.

Japanese Persimmons—well-rooted, grown at Emerald. The flavor of the Persimmon when perfectly ripe is most luscious. They ripen in the winter, and thus furnish a valuable fruit for the table at a season when fruit is scarce. Varieties are Dai Dai Maru, Kurokumo, Delicious, Triumph, etc.

Other fruits include Oranges, Lemons, Mandarins, Grape Fruit, Lime, Grape vines, Passion Fruit, and

berry fruits. A new Raspberry is being put on the market this season. Further particulars will be available later.

It is estimated that the nurseries contain over two and a half million trees in various stages, including fruit tree stocks, of which ample supplies are available for future use.

The soil at the Gembrook Nurseries is particularly suited for fibrous-rooted trees, which can be moved to other places with safety.

Excellent facilities are available for packing and transporting to all parts of the world. New Zealand, South Africa and the Argentine have bought large quantities of fruit trees from Australia in the past. The quota from the Gembrook Nurseries used to be a quarter of a million annually. South Africa and New Zealand have not taken trees for some years, but the Argentine is still importing thousands of trees annually from Australia.

Summed up, it may be said that the nurseries of C. A. Nobelius & Sons Pty. Ltd., of Emerald, Vic., are carried on under skilled supervision, and maintain the standard of quality which has always been the firm's objective,

HOUSEHOLD INSECT PESTS.

An interesting booklet on "Household Insect Pests," has been issued by the Victorian Department of Agriculture. The work has been compiled by Messrs. C. French, Jnr., and G. T. Levick, B.Ag.Sc., Entomologists.

The pests dealt with are:—Powder post beetle, furniture borer, white ants, house fly, ants, silverfish, book lice, fleas, and carpet beetle.

Each of the pests and its habits are described, and the best method to get rid of them is also given.

A cool store for Apples is to be erected at Villiersdorp, South Africa, at a cost of £8,000. Apples are the chief product of the district, and the export possibilities is the reason for the outlay.

-LEMONS-

**We are the largest Buyers
in Australasia**

C. M. BROOKE & SONS
73 Whiteman St., South Melbourne, Vic.

AGENTS WANTED

To Influence Consignments of Apples by
Reliable Firm

Write, Stating Terms, Etc., to—
**HARTSTOKE, FRUITERERS
LTD.,**

Brentford Market, Middlesex.

Code: A.B.C., Fifth Edition.

Cables: "Hartstoke, Brentford,
Middlesex."

Fighting Insects Pests in the Orchard

Helpful Hints for March.

Red Spider and Bryobia Mite.

During the hot weather these destructive mites are very prevalent on the underside of Apple leaves. When badly attacked the leaves turn a sickly yellow and shrivel up.

Spray underside of leaves thoroughly with nicotine sulphate or black-leaf 40, and use a misty spray.

In winter use red oil or lime sulphur to destroy eggs.

Burn all fallen leaves.

The Orange Butterfly.

The caterpillars of this handsome butterfly measure 2 inches in length, with the head dark brown and the upper surface of the body green, marked on the sides with brown and a white stripe; the back is marked with rows of short spines. They are very destructive to the fruit spurs and young citrus fruits. Spray with arsenate of lead, 1 in 25.

Green Hanging Moth of Apple.

This is a native insect found breeding in native trees, such as tea-tree, also young eucalypts. The caterpillars bore into the stems of the trees. When sawdust-like material is noticed on outside of tree, remove this and put a small quantity of bisulphide of carbon on a rag and place in the tunnel and close entrance at once by placing clay or soap over it. This will prevent the fumes from escaping. Probe tunnel with strong piece of wire, this will often destroy caterpillars.

Pear Root Aphis.

These insects are becoming very numerous in Pear orchards in many parts of Victoria. It is a small dark aphid covered with a white cottony material and greatly resembling the woolly aphis, but attacks only Pear roots.

Control.—Eliminate young stunted trees and replant healthy ones. The Japanese Pear stock (*Pyrus Calleryana*) is much more resistant to this pest than the French seedling stocks.

Remove soil to a depth of 6 inches around tree and spread Paradichlorobenzene (P.D.B.), about roots. Cover over immediately with soil. Stamp it firmly down.

Light-brown Apple Moth.

These green caterpillars are exceedingly numerous at present, and if not destroyed will cause much damage to fruit spurs of Apple trees. They also attack late Apples, such as "Yates" variety. Spray with arsenate of lead.

Looper Caterpillars.

See "The Fruit World," January 1, 1929.

Pinara or Snout Moth.

See "The Fruit World," January 1, 1929.

Codlin Moth.

Moths are plentiful during the hot weather. It will be necessary to spray several more times before the end of the season. The Apples should be well covered with arsenate of lead. Destroy grubs in bandages, remove all loose bark and destroy weeds near fruit trees.

Light-brown Apple Moth Caterpillars on Grapes.

These small active greenish caterpillars are more numerous than usual

at the present time in vineyards, and are to be found in the young bunches of Grapes. When spraying, it will be necessary to thoroughly force the spray into the bunches of Grapes. Use arsenate of lead spray.

Stick-case Moths.

Several species of stick-case moths have made their appearance in Apple orchards recently. These insects cause a fair amount of damage to the trees. They are easily destroyed by the arsenate of lead spray.

SPRAYING.

A valuable booklet has been issued by the Neptune Oil Co., River-street, Richmond (Vic.), dealing with the treatment of orchard pests and diseases. Great care has been exercised in the compilation of this book, and the instructions given are based on results obtained from practical experience. Contained in this booklet is a table of mixable and non-mixable sprays, a detailed spraying calendar, and an interesting article on the control of codlin moth and other pests affecting citrus and deciduous fruit trees.

The Neptune Oil Co.'s spraying preparations include the following:—Red spraying oil, lime sulphur solution, Berger's arsenate of lead, resin and soda wash, atomic sulphur, Blair's Bordeaux powder, black-leaf 40, blue-stone (Macclesfield's and Australian), sublimed sulphur (English), flowers of sulphur (Sicilian), ground sulphur, spray spreader, soda crystals, caustic soda and soft soap. This spraying booklet may be obtained on application to the above address.

Reduction in Price of the NEW SYNTHETIC FERTILISERS Urea Diammonphos

46 per cent. Nitrogen as Urea.

20.6 per cent. Nitrogen as Ammonia.
52.5 per cent. Sol. Phosphoric Acid.

NITROGEN FOR FRUIT TREES is best applied in either of these forms, because:—

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| (1) They leave no useless matter in the soil. | (3) They are immediately available. |
| (2) They save cartage, handling, and distribution costs. | (4) Their effects last. |

IDEAL for swelling and coloring Fruit, and for Autumn application to CITRUS Trees.

Consult your Local Agent, or Write to Us for New Prices and Particulars.

DYES & CHEMICALS [Aust.] LTD.

573-585 Lonsdale Street, Melbourne Also in Sydney, Wellington & Perth

HARVESTING OF PRUNES.

Three Stages of Ripening.

There are three intervals in the ripening of Prunes. The first Prunes that ripen do not as a rule contain the same amount of sugar as those that ripen in the second and third stages. As Prunes that are deficient in sugar (and this, after all, is the main preserving factor) are subject to mould and also to an incrustation of sugar on the surface, which is sometimes mistaken by consumers for mould to the depreciation of their value, it is recommended by the N.S.W. Department of Agriculture, that the Prunes that ripen first be kept separate from the main ripening and disposed of immediately they are ready for consumption.

This first ripening invariably falls if it is allowed to do so, and as a matter of practice it should be allowed to fall and should never be picked. A large percentage of the second ripening stage will also fall when sufficiently ripe, but as a rule the fruit of the third ripening stage will require to be picked, as they seem to adhere very tightly to the branches, even after they are fully ripe.

In all cases it is most important that the fruit should be allowed to attain its

full percentage of sugar before drying, and all undeveloped fruit should be discarded. As the fruit is permitted to drop to the ground, precautions should be taken by the grower to see that the surface is loose and free from clods; in fact, the careful grower will take the precaution of raking around the base of the tree and outwards for a sufficient distance to catch any fruit that may drop from the spreading branches.

POWDERY MILDEW OF APPLE.

Preventive Measures.

Powdery mildew of the Apple has been much in evidence this season, and the matter of combative measures should be kept in mind when the time for winter pruning comes round, badly mildewed twigs and terminal buds being as far as possible cut out and burned.

This mildew occurs on the leaves of the Apple in small, whitish, felt-like patches, which may extend until the whole leaf is covered. When a plant is badly infected the young shoots are attacked. The greatest damage is done by the mildew when

attacking young and opening leaf-buds and young plants.

The disease is caused by a parasitic fungus (*Podosphaera oxyacanthae*). Large numbers of spores are produced during the summer, and these can reinfect fresh areas on the twigs and foliage. A wintering stage is recorded for this, or an allied fungus, in other parts of the world, but has not been found here yet. There seems little doubt that the fungus winters here in the form of threads in the immature buds and bud scales.

Control measures consist of removing and burning badly mildewed twigs and terminal buds as previously mentioned, spraying with atomic or atomised sulphur at the spur-bursting stage (10 lb. to 80 gallons), and spraying with either of the above combined with arsenate of lead at the times of application of the latter.

The Victorian Fruitgrowers' Cool Stores' Association is doing good work. A comprehensive plan for advertising to increase Apple consumption is under consideration.

Stationary spray plants are on the increase in New Zealand. Mr. Ralph Paynter, Hastings, reports that electric motors are taking the place of petrol power pumps: it is expected that central spray plants, delivering spray mixtures through fixed piping will be in general use in a few years.

HOW TO USE POTASH.

Potash is probably slower in its action in the soil in breaking and recombination than other plant food elements. For this reason it should be applied early if expected to benefit the same season's crop. One Peach grower, with a known deficiency of potash in his soil, made a late application of potash alone, and condemned it as producing no results. Next year he had such an improved crop that he then applied four times the former amount.

Do not be afraid to apply it early, for potash does not leach from or through the soil; it is firmly fixed or held until drawn upon. As it is used by plant it is a solution of carbonate of potash, whether applied as sulphate or muriate. It is also lasting in effect, its benefits being extended over a longer period than that of any other mineral fertiliser.

Though generally applied or included in complete fertilisers to give finish, firmness and color to the fruit, it has equal finishing effect upon the

wood. Analyses have shown that the greatest percentage of potash is found in the young and forming parts of the tree.

It helps to build and condition the fruiting wood for next year, and it is in this way that it chiefly increases the yield, though to a greater degree improving quality. Its last act of benefit to the fruit is acting with the chlorophyll or green-coloring matter of the new leaves in elaborating the sugar and starch later transferred to the fruit. No fertiliser should be applied to an orchard unless containing potash, and nature suggests this in that stable manure contains as much of potash as it does of nitrogen.

BUNCHY TOP.

The new regulations for the control of bunchy top in Bananas, include the keeping of land free of weeds for a distance of not less than six feet from the plant, in quarantine areas. Where the ground surrounding the plant has not been kept free of weeds as prescribed over a period of six months, the owner or occupier will be required to treat and subsequently to destroy the plant as prescribed in the regulations. The treatment consists of spraying the whole surface of the plant with a contact insecticide in such a manner as to kill all aphids on the plant, or of pouring down the centre of the stem of the plant not less than two liquid ounces of kerosene.

U.S.A.'S GREAT PACIFIC ASSET.

Some idea of what the islands of Hawaii mean to U.S.A. can be gathered from the amount of farm produce (including sugar and Pineapples) sent to America annually. Last year the value of produce imported from the islands by United States was 110,338,000 dollars.

Quality Fruit Trees. — Special attention is directed by C. J. Goodman, fruit tree nurseryman, of Bairnsdale, Victoria, to the fact that the firm is celebrating its fortieth anniversary. Since the founding of the business by the late C. J. Goodman, the aim has always been to gain the goodwill of the fruitgrowers by delivering first quality trees: the firm is in receipt of valued appreciations from all parts of Australia and New Zealand, as well as other parts of the world.

FRUIT PACKING CHARTS.

The Victorian Department of Agriculture has prepared an exceedingly valuable series of wall charts, showing the correct method of packing fruits.

These wall charts are well illustrated and information is given in detail to enable packing to be done on practical and scientific lines. The fruits dealt with include: Apples, Pears, Peaches, Citrus, and Tomatoes.

Copies of these useful wall charts are available on application to the Department of Agriculture (Horticulture Division), 605 Flinders-street, Melbourne.


FRUIT FOR HEALTH.

Apples contain essential requisites in perfect combination, and in a form which makes them readily assimilable and peculiarly satisfactory to the needs of the body. They build up and energise the tissues and provide substances which have great power in the prevention of disease. The science of dietetics has made rapid strides in the last few years, and of the newly established facts none are of greater importance than the vital need of fresh fruit in our daily diet.

Fruits have a special use in certain stages of some forms of disease, but the prevention of sickness is of far more importance than treatment, and for the building up and maintenance of good health, fresh fruit should form a definite part of the daily diet.

It's DRY and RUNS FREELY

—NO LUMPS

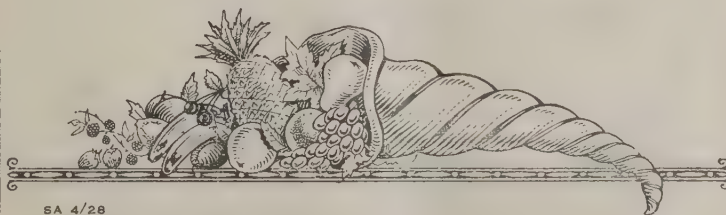
 AN IMPROVEMENT has recently been made in the condition of SULPHATE OF AMMONIA, a dry, free-running, non-caking "neutral" Sulphate of Ammonia now being available to fertiliser users generally.

It contains no lumps, and will be found both more convenient to apply and more economical to use than the Sulphate of Ammonia supplied in the past.

All the proved virtues of ordinary Sulphate of Ammonia are present in this "neutral" quality, the result of the improvement being that an already good fertiliser is made much more convenient to use, and, consequently, much more economical.

Enquiries to

THE METROPOLITAN GAS CO.,
196 Flinders Street, Melbourne.



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FRUIT BROKERS & COMMISSION SALESMEN

Financial Facilities Offered

APPLE and PEAR SPECIALISTS

MAKE YOUR SHIPMENTS THROUGH

Messrs. S. J. Perry & Co. 364 LITTLE COLLINS ST.
MELBOURNE

Phone: Cent. 3480

Who will give all information

Have always had a supply of eggs for the last 2 years

MOST people who keep fowls do so in order to have a supply of eggs. Some "back-yarders" would call it a hobby, but, it soon becomes a disappointing one if week after week, month after month, their fowls simply gobble up food and give nothing in return. Now, "keeping fowls" can be a hobby and a source of real utilitarian value as well if owners will follow the "Karswood" system of feeding for eggs. The "Karswood" way makes the hobby of keeping fowls profitable from the very start. It is so simple and economical that the veriest beginner cannot fail to make a success of poultry-keeping. Just read the letter quoted below and see how the writer, while keeping fowls as a hobby, yet always had a supply of eggs for the last two years as a result of feeding with "Karswood" Poultry Spice:—

Will not be without Karswood while I keep fowls

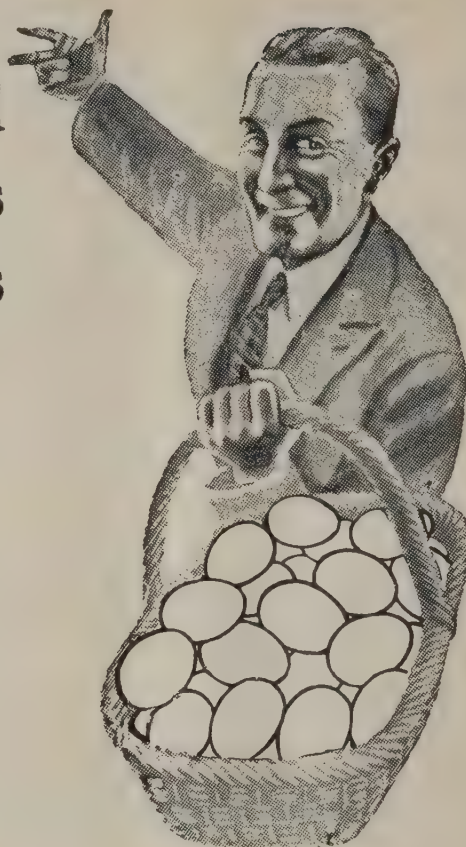
"As a hobby I have always kept seven or eight fowls, and have been using the Karswood Spice for quite two years or more, and have had splendid results. I cannot speak too highly of it as a benefit to the fowls in keeping them healthy, also an egg-producer, always having a supply of eggs, besides preserving some. I never buy any eggs all the year round. The hens only missed laying for eleven consecutive days during the whole twelve months, which I think was very good. I will not be without the Karswood Spice while I keep fowls. You may use this note at any time if it will help your advertising but do not put my name unless asked for. Wishing your company every success, and I will speak for your Spice at all times.

(Mrs.) N.P.

Wonderful results

Yet another enthusiast writes to say she has had wonderful results from feeding her birds with Karswood. Here are her own words:—

I have had wonderful results from feeding with Karswood. The chicks look 4 or 5 months old instead of 2. The mothers which reared them were laying when the chicks were five weeks old. I have also 2 Black Orpington pullets hatched



on 1st June and were laying at 4½ months and have been laying well since. Thanks to Karswood I am not without any eggs at any time of the year. I have got a neighbour who has some fowls and she can't make out why I am always supplied with eggs when she has not any, but I say it is nothing but "Karswood" to make them lay.

You can use this letter as you think fit. I can't say any more about "Karswood" other than it is absolutely wonderful spice. I recommend it to anybody who has fowls.

(Sgd.) Mrs. E. Lawrence,
Summerhill Road, Camberwell, Vic.

Note the Economy

- 1/- packet supplies 20 hens for 16 days.
- 2/- packet supplies 20 hens for 32 days.
- 13/- (7lb. tin) supplies 140 hens for 32 days

Supplies

Karswood Poultry Spice is obtainable at all wholesalers and stores at the following retail prices:—

½ lb. packet	Price	1/-
1 lb. packet	"	2/-
7 lb. tin	"	13/-
14 lb. tin	"	25/-
28 lb. tin	"	48/-



POULTRY NOTES.

The feeding of laying hens is important—to give them enough, but not to surfeit them. Take time at the feeding operations.

Dry mash is suitable for morning meals and corn in the evenings. Do not make any sudden drastic changes in diet.

Hoppers can be simply constructed in which to feed dry mash conveniently.

Green feed is necessary, but where fowls are running at large they can get green feed at their convenience for most of the year.

For keeping poultry houses clear of vermin, use kerosene emulsion frequently.

To make the emulsion, take 8 oz. of soft soap and dissolve it in one gallon boiling water; take the mixture off the fire and add slowly one gallon of kerosene, stirring briskly until the oil and soapy water are thoroughly emulsified. Add 10 gallons of soft water ("hard" water, or such as contains much lime is unsuitable, as it makes the oil separate again). Spray the poultry houses and perches thoroughly.

To make the aforementioned spray into a disinfectant, add one tablespoonful carbolic acid to each gallon of emulsion.

When poultry are found to be suffering from chicken-pox (warts), endeavor to dry up the sores, painting them with tincture of iodine. If the sores have got into the eyes, or are too severe for iodine, use the blue-bag from the laundry. The trouble usually runs its course in about three weeks.

Look out for new breeding stock: good strains, but do not make the mistake of selecting too early maturing specimens.

The following weights are recommended by the N.S.W. Government Poultry Expert as most desirable for breeding stock:—White Leghorns: Cockerels, at least 5 lb.; cocks (over 12 months old), 6 lb. to 7 lb.; pullets, 4 lb. to 4½ lb.; hens (over 12 months),

5 lb. to 5½ lb. Orpingtons: Cockerels, 6 to 7 lb.; cocks, 7 to 9 lb.; pullets, 5 to 6 lb.; hens, 6 to 7 lb.

Turkey-raising is Profitable.

Turkey-raising is profitable. Eggs should be hatched by turkey hens where possible, but they may be hatched by other hens.

Do not give the newly hatched brood any food for the first 36 hours. Then the first two days give them rolled oats or coarse oatmeal. A little hard-boiled egg rubbed in with bread-crumbs is suitable, but it must be eaten up and none left over to get stale, and thus cause bowel trouble.

After this, the principal feed consists of crumbled pollard and bran mash. Pour heated milk over the bran, using one-third of the bran to two-thirds pollard; add 4 oz. salt to the bushel of dry matter.

Supplement this feeding with finely crushed grain, such as wheat and maize for the evening meal. Give succulent green feed, finely chopped lucerne, barley, or rape where possible. Feed the chicks thus for the first 5 or 6 weeks; then reduce the number of feeds and introduce adult feeding: this consists principally of grain; finely chopped onion, leeks, etc., are a valuable addition.

BEEKEEPING NOTES.

BEEKEEPING is a valuable adjunct to fruitgrowing, not only for the honey produced, but because of the extreme value of the bees for cross-fertilising when the trees are in bloom. Modern methods of handling have eliminated many of the previously unpleasant features connected with beekeeping.

Some amateur beekeepers make the mistake of thinking that a petrol case is good enough for a hive, but they soon find out their mistake. For one thing, the sides of the petrol case are about ⅜-inch thick, which does not give the bees sufficient protection from severe hot or cold weather. A suitable hive is one with a floor or bottom board, a hive body to hold the brood frames, supers to hold extracting frames or section holders for comb

honey, and a cover to shield the hive from the weather.

Any colony of bees will gather more honey if it can be prevented from swarming. The old style box hive frequently caused swarming, but modern methods provide sufficient room and encourages the bees by expansion of the hive to keep on storing honey.

Commercial beekeepers seek to extract the main honey flow before the autumn flow begins. Those having small apiaries can often rent an extractor. After extracting, the honey can be put into glass jars. They will granulate if exposed to very cold weather.

Honey is one of the easiest products to keep, but damp has a bad effect. When extracting it is important to keep as little honey exposed as possible, for it excites the bees and is likely to start robbing. Where artificial swarming is desired it is an advantage to have nuclei with young fertile queens to introduce into the new hive. It is important to prevent disease. Foul brood is disastrous. Diseases spread from hive to hive and from district to district, frequently by the migratory beekeeper. Cleanliness is essential.

During 1927, Australian producers formed an organisation with the object of exporting to England the surplus honey produced in Australia. A plant was also established at Mitcham, England, for blending and bottling the honey sent in bulk by the marketing representatives of the beekeepers in the various States. The enterprise is being controlled by the co-operative selling agents acting in conjunction with the State apiarist association, and large quantities of honey were sent to England last year to be sold under the "Golden Wattle" brand in London.

The development of the undertaking, however, has been hampered by the task of financing large shipments, and the financing of the exporting plan on a larger scale is now being considered. At present returns are not made until after the sale of the honey in England. What is now required is the fixation of standards which will enable bulk honey to be sold in England on sample. If all the States of Australia blended their surplus supplies according to definite grades, it would be possible to obtain payment from London buyers as consignments were sent forward, which would render the financing of large shipments very much easier.—"Imperial Food Journal."

Paper Mulching

Good Results Secured

Mulching paper experiments carried out since 1924 at the Arlington Experimental Farm, Virginia, have been productive of wonderfully good results, particularly in the case of Tomatoes, Sweet Corn, and Sweet Potato crops. Numerous types of paper were used during the experiments, but the most gratifying results came from the use of asphalt paper.

According to Dr. L. H. Flint, associate physiologist, U.S.A. Department of Agriculture, the paper mulch experiments carried out by his department have increased the yield of plants in every instance. Besides the effect on yields, several other features had been noticed:—

- (1) Minimises weeding, of great importance to the conservation of moisture in the soil.
- (2) Retains moisture that would otherwise evaporate.
- (3) Helps to produce hardier plants, as well as more plants to the acre.
- (4) Advances maturity to a substantial degree.
- (5) Eliminates the necessity for cultivation.
- (6) The fact that it is possible to produce more plants to the acre is of

particular importance where land of high value is extensively cultivated.

A Summary of Results.

Dr. Flint thus summarises the results of the experiments under his supervision:—

The increase per unit area was found to be related to the proportion of surface covered, maximum increases following complete coverage by the mulching paper.

The increases obtained appeared normal in all particulars. There was no indication of tendency toward excessive vegetative vigor. In all crops, further advantages accruing through the use of the mulch included elimination of all inter-row weeding and facilitation of such inter-row weeding, as well as the elimination of all cultivation. In certain crops, further advantage accrues through the increase of germination, contributing to a greater yield per acre; a marked hastening of maturity and a superior crop in point of size, quality and cleanliness.

Physical Factors Being Studied.

The department is now paying special attention to physical factors associated with stimulation, although these experiments have not advanced sufficiently far to announce any definite results.

AMERICAN FRUIT MACHINES.

Two catalogues dealing with American fruit graders, washers and driers, have been received from the American Trade Commissioner, who is desirous of information relating to the possibilities of the machines finding a market in Australia.

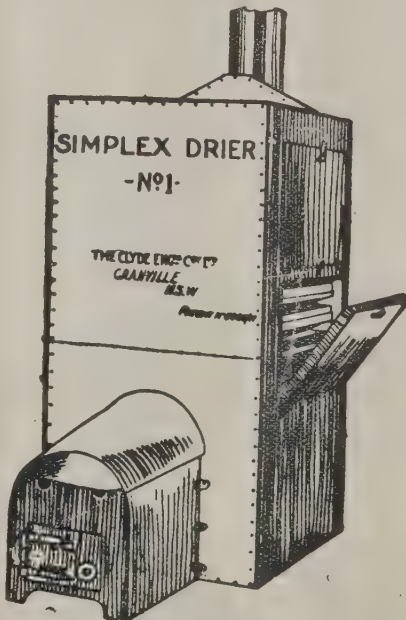
The machines are manufactured by the Ideal Grader and Nursery Co., Hood River, Oregon, U.S.A. Fruit graders are in nine different sizes, and are a system of belts so arranged that the machines will operate with a maximum of efficiency when power is applied.

The standard motor equipment consists of Westinghouse $\frac{3}{4}$ h.p. One of these motors is sufficient for the three-section graders, and two for the four and five section graders.

The Ideal Fruit Washers and Driers have a capacity of 400 boxes to 2,000 boxes, and are manufactured in three standard sizes.

Further details may be obtained from the American Trade Commissioner, Mr. S. E. Peabody, Chancery House, 440 Little Collins-street, Melbourne, Vic.

Love is the tuning-fork of life. It gives the key-note to harmony in every situation.—C. E. Newcomb.



The Clyde Simplex Driers

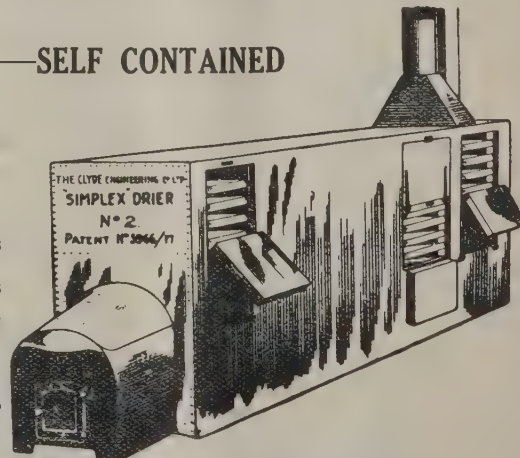
For Drying
Fruit, Vegetables and other Products

NO MORE WASTE FRUIT OR VEGETABLES

SIMPLE — SELF CONTAINED

Made in Sizes to suit

Householders
Small Orchardists
or
Large Factories



The Clyde Engineering Co. Ltd.
GRANVILLE, N.S.W.

SIX IMPLEMENTS IN ONE

Reversible to throw to or from the trees.

Made in various sizes. Send for particulars

ONE WAY DISC - SPRING TYNE CULTIVATOR
TWO WAY DISC - LIGHT 3 FURROW PLOUGH
CUTTING RAKE - IRRIGATION FURROWER

L E A V E S T H E L A N D P E R F E C T L Y L E V E L



S I M P L E T O O P E R A T E

We Manufacture a Full Range of Special Tractor Orchard Implements

Write for Catalogue, stating either Tractor or Horse Drawn Implements

D. HARVEY, ORCHARD IMPLEMENT MAKER
BOX HILL, MELBOURNE, AUST.

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AGENTS ALL STATES.

The Fruit Trade

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GREAT BRITAIN.

London.

Dennis & Cooper Ltd., Covent Garden.
Margeson & Co. Ltd., Covent Garden.
Monro, Geo. Ltd., Covent Garden.
Pask, Cornish & Smart, Covent Gar-
den.
Poupart, T. J., Covent Garden.
Ridley, Houlding & Co., Covent Gar-
den.
Swann & Co., 3 Salter's Hall Court,
Spitalfields Market, E.1.

Hull.

White & Son Ltd.
The Port of Hull, London and N.E.
Railway. Rep., Major H. S. Cole,
c/o Burns, Philip and Co. Ltd., 7
Bridge St., Sydney.

Manchester.

The Port of Manchester, rep., W. J.
Wade, 8 Bridge Street, Sydney.

GERMANY.

Bremen.

Fruchthandel, Gesellschaft.

Hamburg.

Asthelmer, P. H., & Son, Fruchthof.
Lutten, J. H., & Sohn, Hamburg.
Stier, Aug., Fruchthof, Reps. J. B.
Mills & Co., Bank House, Melbourne.
Timm & Gerstenkorn.

ENGLISH FRUIT PROSPECT.

Messrs. Ridley & Houlding, Covent
Gardent, London, wrote on January
10, stating that as European Apple
crops are much lighter than last sea-
son, the market will be dependent on
overseas Apples for their require-
ments. Although American holdings
were fairly heavy at the time of writ-
ing, considerable depletion is expect-
ed during February and March, there
being a steady domestic demand in
U.S.A. Market prices have been
fairly good for some time past, en-
couraging a large movement of
Apples, the trade having responded
with a steady demand. Prospects are
encouraging for Australian fruit.
The firm recommends the shipment
of fairly good parcels by each steamer.
They advise against the splitting up
of consignments, small parcels being
difficult to place, as buyers prefer
the straight lines of fruit in reason-
able quantities.

New South Wales.

Sydney (18/2/29).

Mr. F. Chilton, City Markets, re-
ports on February 18 as follows:—

Pears and Peaches have been
heavily supplied for some weeks past,
but a slackening of supplies and im-
provement in values have recently oc-
curred. Apples are selling freely, but
the demand for Pineapples is very
dull, and "water blister" prevalent.

Queensland Fruits.—Bananas, 13/-
to 25/- per case. Pines, smooth leaf,
7/- to 11/-. Apples (Stanthorpe
district), Jonathan, 12/- to 15/-
per bus. case; Delicious, 11/-
to 14/-; G.S., 10/- to 13/-; Dunn's,
8/- to 10/-. Tomatoes, 12/- to 17/-
per half-case. New South Wales
Fruits.—Bananas, Tweed River, 13/-
to 25/- per case. Lemons, 15/- to
24/- per bus. case. Oranges, Valen-
cias, 14/- to 20/-. Apples, Jonathan,
10/- to 15/-; London Pippin (green),
8/- to 11/-, Quinces, 7/- to 10/-,

Cucumbers, 3/- to 5/-. Passions, 12/-
to 20/- per half-case. Peaches, irri-
gation areas, 4/- to 6/-. Plums, 4/-
to 7/-. Tomatoes, 10/- to 18/-.
Grapes, ordinary, 5/- to 7/-; Muscat,
8/- to 13/-. Victorian Fruits.—Pears,
W.B.C., 7/- to 10/- per bus. case.
Peaches, 8/- to 13/-. Tasmanian
Fruits.—Apples, Worcester, 9/- to
13/-; Alfriston, 8/- to 11/-.

Victoria.

Melbourne (5/3/29).

The following wholesale prices, sup-
plied by the Wholesale Fruit Mer-
chants' Association of Victoria, are
those which ruled in the Western Mar-
ket on March 4 for average quality
fruit. Some special lines brought
higher prices, but, on the other hand,
considerable quantities were sold at
lower prices, due to inferior quality
and bad packing and grading. Apples,
good to choice eating, 8/- to 12/- a
case; good to choice cooking, 6/- to
8/-. Green Bananas, Queensland, spe-
cial, 26/- to 28/- a double case, and
odd to 29/-; choice, 21/- to 25/-; stan-
dard, 15/- to 19/-. Grapes, 6/- to
10/- a case, few specials higher; quan-
tities still arriving wet. Lemons, best
yellow, 16/- a case, few specials
higher; others, from 8/-. Cantaloupes
5/- to 7/- a case. Watermelons, 3/-
to 7/-. Oranges, Valencias, 8/- to
13/- a case, few specials higher. Pas-
sion Fruit, 14/- to 17/- a case.
Peaches, dessert, 6/- to 8/- a case;
others, 3/- to 5/-; quantity affected
with brown rot on arrival. Pears,
6/- to 9/- a case. Pineapples, Queens,
12/- to 17/- a double case. Tomatoes,
best quality, 6/- to 8/- a case, few
specials higher; medium quality, 3/6
to 6/-.

Victorian Central Citrus Association
reports that there is a limited de-
mand for Valencias. Prices for col-
ored Lemons are firm. Sales were as
follow:—Valencias, large standard,
84's and under, to 8/-; 96's and up,
9/- to 13/-; average special, 10/- to
15/-. Lemons, new season's, colored,
96's, 11/-; 140's to 248's, 14/- to 20/-,
some higher; green and old season's
lower. The Grape market is dull.
Supplies are heavy and many con-
signments are still opening wet. To-
matos are also arriving in poor con-
dition. Mildura and Woorinen Grapes,
7/- to 12/-, according to condition,
few specials higher; very wet lines
lower. Bendigo Tomatoes, 3/- to 7/-.

South Australia.

Adelaide (27/2/29).

Apples, eating, 10/- to 12/- per
case; cooking, 8/- to 10/-. Bananas,
30/- per crate. Blackberries, 3/- to

3/6 per dozen lb. Figs, 10/- per case. Grapes, dark and white, 8/-; Muscatels, 8/-. Lemons, 12/- to 14/-. Melons, sweet, 8/- per cwt.; water, 6/-. Almonds, 11/- per dozen lb. Oranges, 14/- to 15/- per case; navels, locals, 16/-. Peaches, 9/- to 12/-. Pears, eating, 7/- to 8/-. Pineapples, 18/-. Plums, light, 3/- to 4/-; dark, 4/- to 6/-; Damson, 9/- to 10/-; Japanese, 8/-. Prunes, 4/- to 5/-.

Queensland.

Brisbane (27/2/29).

Local Fruit.—Lemons, 5/- to 8/- a quarter-case. Peaches, slip, 3/- to 7/-; cling, 1/- to 3/-. Persimmons, 3/- to 5/-. Passion Fruit, 7/- to 9/- and 4/- to 5/-. Apples, Jon. (2½ in.), specials, 15/- a bushel case; others, 8/- to 12/-; K.D., 9/- to 13/-; Del., 8/- to 12/-; others, 5/- to 8/-; cooking, C.S., 8/- to 10/6 and 5/- to 7/-; M.F. and F.C., 4/- to 6/-. Pears, Stanthorpe, P.T., 5/- to 8/-; Kentucky (P.T.), 8/- to 10/-. Pineapples, rough, 4/- to 11/- a case; smooth, 2/- to 8/-. Grapes, D.D. and G.B., 7/- to 8/- a case; ordinary white, 3/6; Muscatels, 2½d. to 4d. a lb.; R.A. and G.C., 3/6 to 5/-. Quinces, 4/- to 6/- a bushel case. Imported Fruit.—Lemons, New South Wales, 27/6 a bushel case; American, £2/5/- to £2/8/- a double case. Oranges, New South Wales, 18/- to 22/- a bushel case. Plums, Victorian, 6/- to 9/- a quarter-case. Pears, Victorian, Caps., 9/- to 11/- a bushel case; H., 9/- to 11/-; W., 13/- to 14/-.

West Australia.

Perth (21/2/29).

Apples, Jonathans, flats, 6/- to 10/-, special to 14/-, others from 2/-; Dunn's, 4/- to 6/6, others to 11/-; Cleopatras, 3/- to 8/-, special to 12/3, others 2/- to 10/3, dumps 2/6 to 10/-. Pears, 5/- to 12/3, others from 2/-, dumps 3/- to 9/6. Plums, Satsuma, 7/- to 16/-; October Purple, 8/- to 17/-; Black Diamond, 8/- to 16/6; Pond's Seedlings, 5/6 to 18/6; Prunes, 3/6 to 11/-, others 5/- to 12/-, special to 17/3. Oranges, Valencias, 7/- to 16/-, special to 21/6, others from 9/-, dumps 13/- to 19/-. Lemons, 12/- to 18/-, special to 20/-, others from 5/-. Peaches, 16/- to 20/-, special to 26/6, others from 5/-. Quinces, 2/- to 7/6. Grapes, open, white, 2/- to 9/-; colored, 6/- to 11/-, others from 3/-; closed, 1/6 to 7/-. Nectarines, 10/- to 17/-, special to 24/-, others from 5/6. Strawberries, 10/6 to 14/- per dozen punnets. Passion, 4/6 to 11/-. Melons, rock 1/- to 12/-; water, 1/- to 12/-.

New Zealand.

Dunedin (16/2/29).

Reilly's Central Produce Mart reports as follows:—

Apricots, cases 4/- to 6/6; crates, 3½d. to 5d. Nectarines, cases 4/6 to 6/6; crates, 4d. to 5d. Peaches, cases 4/- to 5/6; crates, 3d. to 4½d. Plums, jam, 2/6 to 7/-; dessert Plums, crates 2d. to 5d.; Satsumas, 6d.; Greengages, 4d. to 6d. Raspberries, 3d. to 5d. Figs, 6d. to 9d. Christchurch Tomatoes, choice, 7d.; seconds, 3d.; outside, 2d. to 4d.; locals, 8d. to 11d.; Otago centrals, 4d. to 7d.; Nelsons, outside, 4/6 to 7/6; Hastings, quarters, 1/6 to 3/-. Apples, Gravensteins, dumps, choice, 9/- to 10/6; others, 7/- to 8/-; cooking, 6/- to 8/-. W.B.C. Pears, dumps, choice, 9/- to 10/6; medium, 7/- to 8/-; halves, 4/- to 5/-. Rhubarb, 1½d. to 2d. Garlic, 3d. to 5d. Grapes, 1/10 to 2/-. Lemons, Missions, 47/6. Bananas, ripe, 32/6. Oranges, navels, Sunkist, 47/6. Grapefruit, 37/6.

SPITALFIELDS MARKET.

Big Developments in London.

Per favor of Messrs. Barker, Green & Parke, the Victorian representatives for Simons & Co. Ltd., fruit brokers, of Southampton and London, we have received an interesting booklet regarding extensive Spitalfields Markets. The opening was performed by Her Majesty the Queen, on November 22, 1928. Spitalfields has been the centre for trade in fruit and vegetables for more than 250 years. Following the purchase of the market by the corporation, authority was given to carry out a comprehensive scheme of improvements involving an expenditure of £2,000,000. This market is situated in one of the most densely populated areas in the east-end of London. The aggregate floor space of the market will now be approximately 12 acres. The southern side of the market is to be devoted to the display and sale of imported fruit. Two auction rooms are provided, one with seating accommodation for over 500 people, and the other for 380. The rooms are designed on what is known as the two-room system, and will be the largest auction rooms in the kingdom. Samples of fruit will be taken from bulk at the docks, catalogued and placed in the show rooms. In selling, each sample will be raised

to the auction room by electric lift and lowered again after sale. Much handling will be eliminated, and should result in a reduction of transport and road congestion.

HEALTH EXHIBITION IN SYDNEY.

The Advertising of Fruit Brings Good Results.

At the Health Exhibition in Sydney, from November 19 to 23, a campaign designed to assist the consumption of fruit was conducted by the N.S.W. Fruitgrowers' Federation. In presenting a report and financial statement at the Board meeting of the Federation on February 9, the Secretary, Col. E. E. Herrod, reported that the efforts were successful.

The Minister for Agriculture approved of a special grant from the Orchard Registration Fund of a sum up to £200, but application was made for £150 only.

The Central Citrus Association co-operated in making a success of the Exhibition, and in addition to lending three Sunkist Juice Extractors without charge, also placed the services of their Mr. McDermott at our disposal for the period of the Exhibition. The Batlow Packing House also assisted by providing the services of Mr. Newton, who was mainly responsible for the attractive display of the exhibits.

The Exhibition was considered to have been very successful. It certainly received a very large degree of support from the general public, the hall being crowded during most of the sessions. From a publicity point of view there can be no doubt that the expenditure was justified.

10,000 pamphlets were prepared and distributed free. A large number of applications for additional copies have been received since from one radio broadcasting station.

A very attractive exhibition of fresh, bottled and dried fruits was made and augmented by posters. The Department of Agriculture and the Irrigation Commission loaned a quantity of bottled fruits, and show-cases of dried fruits and a number of jars were also loaned by the 'Producers' Distributing Society.

A feature was also made of Orange juice drinks, which were retailed from a stand. A considerable quantity of fresh fruit, as well as dried Prunes, were sold.

MANURING ORCHARDS AND VINEYARDS.

The attention of all fruitgrowers is directed to the new synthetic fertilisers known as the Nitrophoskas. These complete manures have been designed in accordance with recent research in the use of fertilisers in agriculture, and are a direct result of one of the greatest scientific achievements of all ages, that of the fixation of atmospheric nitrogen. They are offered to fruitgrowers in Australia at prices which conform with current unit values, and no doubt will be welcomed by all as a further means of improving our methods, increasing production, and particularly improving quality of fruit.

They are very highly concentrated, containing, on the average, twice as much plant food as any of the older mixtures. Therefore, by using Nitrophoska, it is possible to manure twice as heavily without increasing the bulk of application. But that is not all. In using Nitrophoska the grower is applying more nitrogen and potash in proportion to phosphoric acid than he has done in the past, and that is just what is required. Trees must produce plenty of wood and broad green leaves—remember that the leaves are the trees' food factory. One of course can overdo the production of wood and leaf, that is the reason why Nitrophoska contains 20 per cent. of potash. Potash acts as the complement of nitrogen. The two foods work hand in hand; nitrogen produces wood—soft wood

—potash hardens this wood. Nitrogen produces large soft green leaves; potash firms these leaves, gives them a glossy appearance, and permits the formation of chlorophyll, that mysterious, but vital substance. Phosphates stimulate root growth, and the production of blossom. The three foods act together in producing and swelling the fruit—potash in particular giving sweetness and firmness.

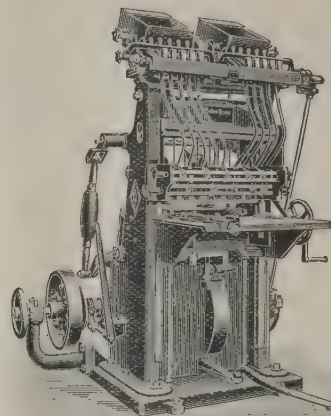
One may have ever so much potash available naturally in the soil, but the tree will only utilise an amount in direct proportion to the supply of nitrogen or phosphoric acid, which it is able to get; or, similarly, one may apply a large quantity of bonedust or superphosphate or both, but most of this will be wasted unless there is a sufficiency also of both nitrogen and potash. The best policy, therefore, is to apply all the foods together, and at the right time.

"GROW MORE FRUIT."

Campaign in England.

A "Grow More Fruit" campaign is being conducted in England: it is believed that with improved grading and packing the English-grown Apples will more than hold their own with the imported Apples from U.S.A., Canada, and the Continent.

A Victorian fruitgrower, who recently returned from U.S.A. and England, says he believes the best way to make money at fruitgrowing is to go to England and grow Apples.



Bohm & Kruse's

Case Nailing, Case Printing and Shook Splicing Machines which are Time Saving and Profit Increasing.

Keep yourself acquainted with modern developments in machinery. Every new labor-saving device must affect you. If your competitor adopts it, it HANDICAPS you; if you adopt it, it AIDS you.

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	A	B	C
3-inch	5d.	6d.	7d. per foot.
4-inch	6d.	7d.	8d. " "
5½-inch	7½d.	9d.	10d. " "
7-inch	10d.	12d.	13d. " "
9-inch	14d.	17d.	18d. " "
11-inch	16d.	18d.	19d. " "

HAY STACK COVERS

For Hay and Lucerne Stacks, etc.

	3-Star.	4-Star.
12 x 20	£2 3 0	£3 1 6
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18 x 24	4 2 6	5 9 0
18 x 30	5 2 0	6 15 0
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We can supply these covers in any length, 3ft., 6 ft., and 9 ft. wide, suitable for covering drying racks.

Any other size at same rates. Ropes, 3/6 Extra.
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Large Stocks of First-class Secondhand Sacks.

Please write for prices and samples.

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Arsenate of Lead
(Paste and Powder)

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NEPTUNE
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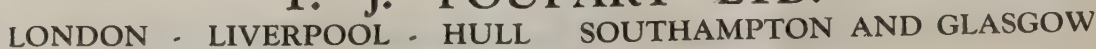
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New South Wales Growers ship through C. Geo. Kellaway & Son, Office 25, City Fruit Markets, Sydney
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That
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spell
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for
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is the famous fungicide. It is ready for immediate use. Wonderfully effective in cases of Black Spot of Apple and Pear; Curl Leaf of Peach; Shot Hole of Apricot, and Black Spot of Vine.

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When post holes are to be made for fences, sheds, etc., get the tool designed especially for the job and cut out the laborious, time-wasting, old-fashioned method.

One of the handiest tools out for the man on the land. Only necessary to lean on it and turn it to the right. The result is a speedy job, and clean cut holes. Ramming is reduced to a minimum. Although very strong, the Seymour is not clumsy or heavy.

Can be used for boring by adding pipe lengths to the bar.

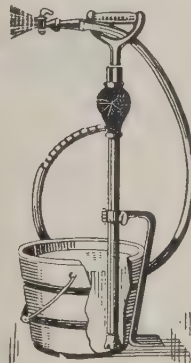
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Bucket Spray Pumps

Bucket Spray Pump, English Make. Proof against the action of spraying liquids, and will last for years. Bucket foot-rest is of malleable iron. Air chamber assists in throwing a constant stream, so that the operator can pause between each stroke, making rapid pumping unnecessary. Supplied complete with 3 feet hose and one Bordeaux patent nozzle, which can be instantly regulated to a solid jet or the finest spray. No bucket supplied. When used with a kerosene tin or similar container, it forms a handy fire-fighting outfit.

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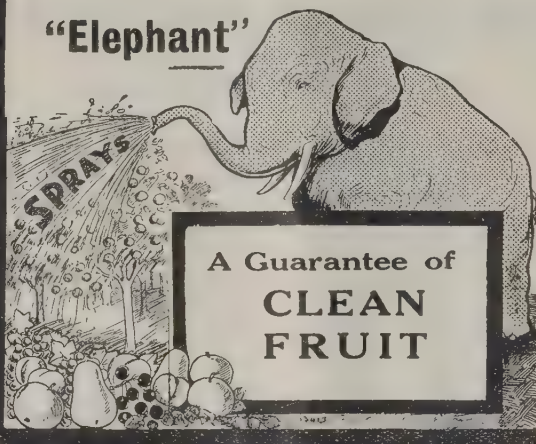
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Double action Jacks for lifts up to 10 tons. £10/15/- each.

Single action Jacks for lifts up to 8 tons. £9/10/- each.

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The fruit crop is light and Apples will be scarce and dear next season, therefore spray thoroughly and frequently with

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Arsenate of Lead

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Remember! Spraying thoroughly not only saves your apples this season but reduces the number :: of Codlin to contend with next season ::

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South Africa Forges Ahead.

There has been an increase of 60 per cent. in South African fresh fruit exports during the past five years. The value of the fresh fruit exports for 1927 was very little short of £1,000,000.

Government Research Farm.

The Raspberry canes at the Government Research Farm at Kalorama (Vic.) are doing remarkably well. Officers from the Science Branch attend regularly and find opportunity for valuable field work, which has not before been available for the study of plant diseases and insect pests.

California Lemons.

Most of the Lemons produced in the United States are grown in California. The average production of that State is six million boxes per year. Last year the Californian crop was 6,400,000 boxes.

Give your whole attention to whatever you are doing, and think nothing unworthy of careful consideration. —Confucius.

The World's Citrus Outlook.

With Special Reference to Oranges and Grapefruit.

Acreage and Production are Increasing in the Various Countries of the World.

Local and Export Markets Reviewed: Scientific Production and Distribution Essential.

(By Bruce McDaniel, General Counsel, Mutual Orange Distributors, Redlands, Cal., U.S.A.)

The world's citrus position is capably reviewed in the following article, which was delivered as an address by Mr. McDaniel before the Arizona Citrus School, Phoenix, Arizona, on February 9, 1929. While written primarily to consider the world's situation in relation to western U.S.A., it is obvious that all the countries concerned will follow the information closely. Cold storage and modern transportation have brought the countries of the world closer together. We have to "think big" in these days—to think in terms of world affairs.

After reviewing the world's citrus situation and noting the big increases in production, the conclusions are, that home markets must be intensively developed, new markets opened up, reduction of "marginal" producers, review of tariff rates, and elimination of waste efforts in production and distribution.—Ed., "F.W."

A COMPREHENSIVE GRASP of the citrus industry from an international viewpoint is to-day essential in determining what the future holds in store for the citrus grower, whether he be engaged in the business in Arizona, California, Texas or Florida, in the Argentine, Palestine, Porto Rico, South Africa, Australia, or Paraguay. The citrus industry has become a world industry; an industry which affects and is affected by numerous other agricultural commodities; and which, because of its international character, is to-day more susceptible to world influences than ever before in its history.

International in Character.

So closely have the economic and political relations of the principal citrus producing countries become interwoven that conditions which concern one, in turn are apt to bring prosperity or depression to the others. A large crop in the Union of South Africa may, for example, be felt by the Arizona shipper in the markets of the United Kingdom; over-production in Italy may vitally concern the Lemon grower of California, and the present

Orange boom in Palestine

may react unfavorably toward Spain and Australia in certain buying areas of Europe. Since modern transportation facilities, together with more efficient methods of handling citrus fruits, have enabled the citrus grower to invade world markets, he, in turn, must realize that by so doing he has assumed new responsibilities. His problem is no longer a country, State, or national one. His future prosperity is linked in many ways with that of every other citrus producer; and, to anticipate what might occur in the citrus industry by becoming familiar with present international trends in production and distribution should be of grave interest to him. The future safety and earning power of his investment is dependent in many ways on these world-wide conditions.

The Orange Industry.

World Production and Acreage.

When the Orange grower in the United States produces a crop he at once faces potential competition from fifteen other principal Orange-producing countries, including

Spain, Italy, Japan, China, Palestine, South Africa, Australia, British West Indies, Cuba, Mexico, Porto Rico, Brazil, Algeria and Greece; not to mention several other countries as yet of minor importance, but which, in the not too far-distant future, will probably become factors to be reckoned with, such as New Zealand, capable of producing commercially practically any citrus fruit which can be grown in sub-tropical and temperate zones, and Argentine with her large acreages in Misiones Territory just below the Paraguayan border, now being planted almost wholly to Oranges.

The discussion which follows will be restricted to Oranges and Grapefruit, and to only the principal of the above-mentioned foreign producing countries, which, for Oranges, are Spain, Italy, Palestine, Union of South Africa, Australia and Japan.

Spain.

Authorities disagree in the matter of whether the United States or Spain is the largest producer of Oranges in the world. A recent statement by H. R. Wellman, extension specialist in agricultural economics of the University of California is:—"Spain ranks next to the United States in the world-production of Oranges. During the three years: 1924-1925, 1925-1926, 1926-1927, the average annual production in Spain was 32,771,000 boxes, while the average production annually in the United States was 33,649,000 boxes."

The U.S. Department of Agriculture, through its Food-stuffs Division, advises: "Spain is the largest producer of Oranges in the world. Available statistics show that in the 1926-1927 season total Spanish Orange production was the equivalent of about 34,000,000 United States boxes (figured on 70 pounds per box), as against about 39,000,000 boxes in 1925-1926. In addition, there were produced in 1926-1927 the equivalent of 1,400,000 United States boxes of Mandarins compared with 1,250,000 boxes in 1925-1926. Spain," the report continues, "the largest exporter of Oranges in the world, shipped an average of 18,500,000 boxes a year in the period 1922 to 1926, contrasted with 3,500,000 boxes from Italy, and over 2,000,000 from the United States. The average annual value of Spain's Orange exports is £4,713,600."

Spain exports about 60 per cent. of her output of Oranges, and it is believed that its recent substantial increase in exports will continue. Of Spain's average yearly exports of approximately 22,000,000 boxes of Oranges from 1924 to 1926, the United Kingdom took 10,800,000 boxes, or 50 per cent.; France took 3,600,000 boxes, or 16 per cent.; Germany took 3,300,000 boxes, or 15 per cent.; other European countries accounting for the remaining 19 per cent.

Spain, in 1925-1926, had some 127,175 acres of commercially bearing acres of Oranges. Since 1923, it has been adding substantially to its plantings, so that we may expect a corresponding increase in Orange production there.

Italy.

In the five years period, 1922 to 1926, Italy's exports of fresh fruit exceeded an average annual value of £5,000,000, of which Lemons and Oranges were the leading items, the former being valued at £1,625,000, and the latter at £1,591,600. During the period 1921-1925, inclusive, Italy produced about 10,000,000 boxes of Lemons a year (or twice the United States' annual production), and 9,400,000 boxes of Oranges (about one-third of the United States' annual production). Eighty-seven per cent. (87 per cent.) of the Lemons and fifty-three per cent. (53 per cent.) of the Oranges were produced in the Province of Sicily.

Italy's Exports.

That Italy recognises the importance of her export trade is evidenced by the fact that the country has adopted a national trade-mark for use only on export shipments, and all Oranges intended for export under this trade-mark must meet definite and strict regulations relating to grade, pack and container size. Italy apparently has decided to maintain the reputation of her Oranges in overseas markets, and preserve those necessary outlets for its surplus.

Italy's exports of Oranges from 1922 to 1926 averaged 3,600,000 boxes per annum; in 1922 and 1923, 2,600,000 boxes, but in 1924 that figure jumped to 3,900,000 boxes (increase of 1,300,000 boxes), and, in 1925, to 4,550,000 boxes (an increase of 650,000 boxes over 1924, and 1,950,000 boxes over 1922 and 1923). For 1926 the total was about the same as for the preceding year.

Italy's Export Markets.

Thirty-nine per cent., or 1,400,000 boxes, of Italy's average annual exports of Oranges from 1922 to 1926, went into Germany. France took 500,000 boxes (14 per cent.); Austria, 480,000 boxes (about 14 per cent.); Switzerland, 300,000 boxes (8 per cent.), and Hungary and Czechoslovakia, approximately 175,000 boxes (5 per cent.) Yugoslavia and the United Kingdom absorbed around 100,000 boxes per annum.

Italy is rated as the third largest Orange producing country in the world.

Change in Markets.

Compared with Spain, from whom the United Kingdom takes some 50 per cent. of its exports, Italy markets but 1.5 per cent. of its Orange exports in Great Britain. Interesting changes have occurred in Italy's export trade. Back in the years 1923-1925, a great increase in purchases of Italian Oranges took place in Germany, Austria, Czechoslovakia, Hungary and Yugoslavia, and during those years France and Great Britain reduced their demands. The year 1925 found Germany, France and Switzerland becoming more important buyers, and the old Austria-Hungary Empire, as well as Great Britain and Russia, had dropped into a minor position.

Palestine.

"There is an Orange boom in Palestine at the present moment," wrote an authority in the August, 1928, issue of the "Palestine and Near East Economic Magazine."

Col. E. R. Sawyer, Director of Agriculture and Forests of Palestine, forecasts that there will be sixteen thousand acres, or seventy thousand dunams of Oranges planted by the end of 1929.

So far, Orange growing has proved to be the most important and lucrative branch of horticulture in Palestine, and both the Jews and the Arabs are participating in the development of that industry. At present there are some 8,000 acres of Oranges in full bearing, and if the prophecy regarding plantings comes true, by 1934-1935, Palestine should have all of its 70,000 acres in full commercial production.

An idea of the present extent of

Palestine's Orange industry

is reflected in the 2,767,475 cases produced there in 1926-1927, which crop exceeded that of 1924-1925 by 17 per cent., and the average between 1921-1922 and 1925-1926 by 60 per cent. The total estimated crop per annum, since 1922-1923, has averaged over 2,000,000 cases of which from 70 to 80 per cent. has been exported, the balance being consumed locally in Palestine. The 1929-1930 crop it is expected will reach a total of 3,000,000 cases, of which about 2,400,000 cases will be exported. Compared with the 1919 output of 767,805 cases, that of 1926-1927 marks an increase of 2,000,000 cases.

Destination of Exports.

For the six years, 1922-1927, the United Kingdom took an average of 68 per cent. of the total Palestine Orange exports; Egypt, an average of 27 per cent., with the balance distributed to Holland, Germany, Turkey, Roumania and a few other countries. There was a fifty per cent. drop in Egypt's purchases between 1922 and 1927, due, it is said, to the increased popularity of Syrian and Cyprus fruit in the Egyptian market, resulting from the added production in northern Egypt, together with the effect of an Egyptian law, which required the fumigating of all Palestine Oranges, which Oranges usually moved into Egypt by eight-ton carloads loose. The United Kingdom, however, since the beginning, has been "the market" for Palestine Oranges.

Principal competitors, in the order of their importance, from Palestine's viewpoint, are Spain, Italy and the United States. From Spain, Palestine anticipates strongest competition in the markets of the United Kingdom; from Italy and the United States, in the Central European countries.

Oranges in South Africa.

In 1927, the Union of South Africa had 3,050,528 Orange trees, of which more than half were Navels, approximately 1,000,000 Valencias, and the balance other varieties, including a few Tangerines and Lemons. Of that total virtually 1,400,000 were five years of age or older.

In 1926, the commercial Orange crop totalled 1,706,000 cases, compared with 970,413 cases in 1924. The next few years will probably find even greater development in production, due to the fact that in 1927 only about one-fourth of the planted area was in commercial bearing. With this additional acreage to come into bearing, South Africa may easily have three or four times more Oranges to market than it had two years ago. Figuring one hundred trees to the acre gives South Africa a potential bearing acreage planted of over 30,000 acres.

The principal competitor for export markets is the United States. The extent to which Africa depends on export markets is shown by the fact that its exports of Oranges (including Tangerines) showed an annual average value from 1923 to 1927 of £275,600, represented by an average per annum of 546,000 boxes of Oranges, 46,000 boxes of Tangerines, and 26,000 boxes of other citrus fruits.

With the exception of 1926, exports of Oranges (including Tangerines) from the Union of South Africa, increased in each year from 1923 to 1927, rising from 400,000 to 802,000 boxes—a gain of over 100 per cent. In comparison, Spain shipped each year around 18,500,000 boxes (70 pounds each), from 1922 to 1926, as against 3,500,000 boxes from Italy; over 2,000,000 went from the United States; about 2,000,000 from Palestine, and 433,000 boxes of Tangerines from Japan. Southern Rhodesia, which adjoins the Union of South Africa, swelled the total by exporting 43,000 boxes of Oranges

in 1923; 53,000 in 1924; 69,000 in 1925; 35,000 in 1926, and in 1927 a total of 130,000 boxes.

The United States, one should recall, in 1927, exported 3,600,000 boxes (70 pounds basis) of Oranges, compared with 2,700,000 boxes in 1926, and an average of 2,200,000 boxes a year from 1922 to 1926.

Australia.

In 1924-1925, Australia produced 2,098,000 boxes of Oranges, as compared with but 1,550,000 in 1919-1920. Most of that production, however, was consumed locally. For example, in 1924-1925, Australia exported but 90,000 boxes, or less than 5 per cent. of the whole output. New Zealand offered the nearest and best market for the bulk of those exports.

Australia is not yet an important factor in the trade with the United Kingdom. Three years ago the bearing acreage of Oranges in Australia was estimated at 32,400 acres, with some 14,000 acres yet to come into bearing, making a total, exclusive of any additional plantings, of 46,400 acres. Overseas export is still in the experimental stage.

Japan.

Japan, two years ago, had 26,862,000 Orange trees planted, of which Mandarins and Bitter Oranges were in the majority. There has been but little fluctuation in the number of trees since 1916. In 1926, aside from Bitter Oranges, Japan produced 9,802,000 boxes, of which 88 per cent. were Mandarins; 4.6 per cent Navels and 7.4 per cent. other varieties. The bulk of Japanese exports are likewise Mandarins, the total of all varieties ranging between 309,000 and 422,000 boxes. The United States meets Japanese competition at this time principally in Canadian markets.

United States.

With these facts regarding foreign Orange acreage and production in mind, let us now briefly consider the status of the Orange industry in the United States in its relation to this potential competitive supply. The producers of the United States are affected by foreign-grown Oranges in two ways: first, by coming into competition with them in export markets; second, by having to compete with them in their domestic markets.

Oranges Imported into U.S.A.

The latter angle concerns principally Porto Rico, from which country come practically all of the Orange imports into U.S.A. The trend of Porto Rico's trade with the United States is shown by the fact that between 1908-1912 and 1923-1927, that country increased its exports to the United States 41 per cent., while, during that same period, U.S. production jumped 87 per cent.

However, U.S. total Orange imports amount to but 1.2 per cent. of the domestic production, being, between 1923 and 1927, only 397,000 boxes against the United States production of 31,757,000 boxes. The Porto Rican Oranges compete chiefly with American Navels, and to a slight degree with late Valencia's. This competition is not of grave moment to-day, and from all indications will not be so in the near future, yet the volume of Porto Rican fruit absorbed by the U.S. markets replace home-grown Oranges to an equal value, and to that extent reduce the American growers' market.

U.S. Orange Export.

As an exporter of Oranges, the United States averages from 2,000,000 to 2,597,000 boxes per year, or about 8.2 per cent. of its total production. A pronounced increase has been made during the past twenty years, amounting to around 158 per cent. from the 1908-1912 period to 1923-1927. Since U.S. production increased 87 per cent. during that time, it will be seen that the ex-

ports increased relatively faster. Actually, however, the increase in boxes in exports was 1,569,000, and, in production, 14,752,000 boxes. Thus one finds that U.S. exports offered a marketing outlet for but a little over 10 per cent. of the increased output and the balance of 89.5 per cent. had to be consumed locally.

Principal Markets.

Canada and the United Kingdom so far, have been the principal foreign markets for U.S. Oranges; Canada absorbing some 85 per cent. of the total exports. In the United Kingdom, as heretofore stated, U.S. Oranges come into direct competition with those of several foreign countries, including Spain, Italy, Palestine, British West Indies, and the Union of South Africa. The relative importance of U.S. Oranges in the markets of the United Kingdom is shown by the fact that of the average annual imports into those markets from 1923 to 1927, Spain won 80 per cent. of the sales; Palestine, 11 per cent.; South Africa, 4 per cent., and all other countries, 5 per cent. Spain, at the present time, is, however, finding stronger competition there from Palestine and South Africa.

Production Outlook.

The United States may expect greater production principally in Florida and Texas. In Florida in 1927, some 40 per cent. of the planted area was not yet in bearing, and it is possible for that State, within the next few years, to produce twice as many Oranges per year as were raised there annually during the past four years. Such an additional output will mean a fifty per cent. increase in our national supply from November to April. Facing this 50 per cent. increased yield from November to May, the growers of the United States should find foreign outlets of more importance to-day than ever before.

Purchasing Power Levels.

In closing this discussion with relation to Oranges, let us briefly consider the forecasts made concerning the future purchasing power of Navels and Valencia's. With reference to Navels it is predicted by an economist of the University of California, who is qualified to speak, that "it does not appear likely, however, that the present high level of Navel Oranges can be maintained during the coming years. Florida Oranges compete directly with California Navels in the consuming markets, and indications point to an enormous increase in orange production in Florida during the next few years."

The purchasing power of Valencia's, it is believed, will not likely be materially affected by the possible increase in Florida's tonnage, except during April and May, but the upward trend of that purchasing power cannot be expected to continue. While a 14 per cent. increase in shipments of Valencia's is anticipated from groves now planted, yet the present level of prices of mid-season and late Valencia's in California, if there are no additional plantings, will possibly be maintained since the demand for them has grown steadily and the saturation point has not yet been reached.

Grapefruit.

Grapefruit is now in a period of expansion. It is said that Arizona, during the next five years, will plant from twenty-five to thirty thousand additional acres of citrus, mostly Grapefruit; in the Rio Grande Valley, in Texas, of the 30,000 acres devoted to Grapefruit, only some 6,000 acres are of commercial bearing age, leaving a potential 24,000 acres yet to be heard from; Florida trebled its bearing acreage between 1918 and 1928; California's Grapefruit acreage increased 79 per cent. since 1925, and a large non-bearing acreage is yet to be reckoned with. From all indications in these four States: Arizona, California, Florida and Texas, one may logically anticipate increased yields and increased bearing acreage.

Plantings Increasing.

What is going to be the result of this added output? Dr. H. J. Webber, Director of the Citrus Experimental Station, Riverside, California, who just recently visited the citrus districts in Arizona and Texas, is reported as stating: "What will this extension mean? Florida is in the midst of a great planting extension, as are also the Gulf States (Satsumas). Meanwhile, in the great British Empire, the Empire Marketing Board, and all agencies in the colonies, are pushing citrus production. In South Africa, Australia, Jamaica, Honduras and Palestine, citrus extensions are being pushed rapidly. The Grapefruit must be considered in the general citrus marketing problem. If people eat more Grapefruit they are pretty certain to eat fewer Oranges. With this tremendous activity in planting in all citrus countries, and with an abundance of land available for extension, the industry is certainly drifting toward serious conditions."

Outlook for Grapefruit.

"The available facts indicate," another authority predicts, "that California Grapefruit growers are likely to experience much greater competition during the winter months in the coming years than they have in the past few years. With the return to normal conditions in Florida, it is expected that the supplies of both Grapefruit and winter Oranges from that State will be substantially larger. In addition, the larger shipments of Grapefruit from Arizona, Texas and California, will probably add greatly to the future supplies. Some further increases in the demand for Grapefruit, both here and abroad, may be expected, but it is doubtful if the demand will be increased as rapidly as supplies are likely to increase. In view of the probable developments during the next few years, it does not appear likely that the present high level of prices in the winter months can be maintained."

There is one pleasing fact with relation to Grapefruit: the increase in demand for it appears to be of a permanent nature. Between 1920-1921 and 1923-1924, the per capita consumption in the U.S. increased 40 per cent., and prices did not decline. The low available supplies reduced the per capita consumption average 12 per cent. during 1926-1927 below that of 1923-1924, yet prices averaged 25 per cent. above those of 1923-1924.

On the crop year ending 1919, the total U.S. production was 3,511,000 boxes; this amount was practically doubled by 1923, went to over 8,000,000 boxes in 1924 and 1925, and in 1927 totalled 7,731,000 boxes. A comparison of these production figures with the average imports of 900,000 boxes per year shows the relative part played by imported Grapefruit in U.S. markets.

From an export standpoint, the U.S. has increased its business substantially in Grapefruit. Between 1922 and 1927, there was an increase in exports of 365,000 boxes; 1927 being 625,000 as compared with 260,000 boxes in 1922. During the same period our imports increased 223,000 boxes, leaving a net increase in exports over imports of 142,000 boxes. Canada and the United Kingdom are the leading export markets. The United Kingdom in 1918, hardly knew what a Grapefruit was; in 1921 it imported over 40,000 boxes, and in 1927 over 700,000 boxes. Competing with U.S. Grapefruit in the United Kingdom are the products grown in South Africa and the British West Indies, both countries now increasing their shipments. We have no competition in the Canadian markets except that of British West Indies. Until recently the U.S. furnished 95 per cent. of the supply. Under a trade agreement of April 30, 1927, Grapefruit from British West Indies was admitted free into Canada, while U.S. shipments were subject to a duty of 1 dollar per one hundred pounds.

Summary.

As usually occurs in agriculture, the success of the citrus industry has stimulated activity in all parts of the citrus producing world. This means that the world's total supply will undoubtedly increase; that competition will become keener; that new markets will have to be opened. old ones more intensely developed. The readjustment of tariff rates; the reduction of marginal producers; the increase in quality production, together with the elimination of waste in both production and distribution—all are factors of importance in preparing for and meeting this growing competition.

There is no doubt but that the domestic demand for citrus may still be stimulated, but now is the time for producers of the United States to think seriously concerning the necessity and advisability of expanding citrus trade with not only the United Kingdom and Europe, but the Orient, South America and other potential buying countries.

A GREAT MAN'S VIEWS.

Sir Arthur Duckham's Message to Australia.

"Work Hard; Keep Smiling; Be Tolerant."

SIR ARTHUR DUCKHAM (leader of the Economic Mission which made a valuable report on Australia), gave an unofficial report on the eve of his departure, in the Melbourne "Herald." In plain homely language, Sir Arthur presented a close-up view of this country's needs and possibilities, and finishes with these words:—

"If I were asked to give a message to Australia, I should be inclined to take 'work' as my text, and urge a greater concentration of effort, accompanied by amity and goodwill among all classes.

"As I have said many times before, this is a great and wonderful country. Its possibilities are almost limitless, but to exploit them thoroughly and efficiently, all must work together in perfect accord. I have big hopes of the Peace in Industry Conference. If it can bring about a better understanding between employer and employee, it will have set Australia on the road to greater prosperity.

"This country has its ills like all other countries, but they are not deep-seated. They will respond readily to treatment.

"I have found throughout life it is good to keep on smiling. I have always had faith in my fellow-man.

"Cheerfulness is a great asset.

"When you feel you have a grouch against someone, when you get an attack of the blues and want to hit out at something, get into the quiet of your office or study. Reduce your thoughts to writing. Make out the best case you can. And when you, have completed the epistle, read it through carefully, dot the 'i's' cross the 't's',—don't overlook the punctuation—then tear it into a thousand pieces and throw it into the wastepaper basket.

"There is a great deal of good in all of us. Let it come out on top. Be cheerful; keep on smiling. Then you will get a good deal more out of life than you ever thought there was in it.

"That is my philosophy. And it has worked out very well."

Irrigation and Fertilisation Affect Citrus Chlorosis.

A Physiological Disturbance:—Causes and Remedy.

A Helpful Review for Citrus Growers.

About ten years ago certain of the older groves in Arizona began to show marked deterioration, especially those of from twenty-five to thirty years of age. Chlorosis and die-back were the principal menaces. The conclusions resulting from experiments conducted by the College of Agriculture, University of Arizona, to study and find methods to control these diseases, are herewith presented with the expectation that they may be of service to producers. The work was carried on by P. S. Burgess and G. G. Pohlman.

The following article is republished from "Citrus Leaves," U.S.A., in the hope that the investigations will be of service to Australian citrus growers.—Editor, "Fruit World."

CHLOROSIS is a diseased condition in plants resulting from the absence of certain essential nutrient salts, probably of iron, but also of potash, phosphates, etc., and accompanied by a loss of the green color, the chloroplasts not acting. The term "is rather indefinitely confined to a fairly widespread physiological disease of plants whose visible indication is a yellowing or whitening of the leaves, denoting chlorophyll disintegration within the chloroplasts," write Burgess and Pohlman. "Anything which prevents the formation of chlorophyll in the leaves of plants or interferes with their normal functioning, strikes directly at the carbohydrate food supply, and at once results in a weakened, diseased condition."

Causes of Chlorosis.

"Trees thus affected yield poor crops of fruit of inferior quality. So far as plant pathologists have been able to learn, the malady is not caused by an outside pathological parasite, but is the result of some vaguely understood internal physiological disturbance or nutritional derangement. A number of unfavorable environmental conditions have been through to cause citrus chlorosis. Among the more common may be mentioned:

- a. Lack of available iron,
- b. Deficiency or improper balance of potassium, magnesium, nitrogen and sulphur within the soil solution,
- c. Absorption of ammonia in excessive amounts by plants following heavy applications of manure to soils of low nutrifying power,

- d. Improper drainage,
- e. Poor soil aeration,
- f. Presence of alkali salts,
- g. Use of fertilisers not suited to citrus culture,
- h. An excess of calcium carbonate (lime) in the soil or subsoil.
- i. And, large surpluses of nitrate-nitrogen at certain periods during the annual growth cycle."

Yellowing or whitening of leaves denotes breaking down within the chloroplasts and results in interference with the carbohydrate food supply. Trees affected are usually weak and bear poor crops of inferior fruit. Experiments conducted in Arizona groves reveal certain treatments especially with relation to older groves.

According to Fawcett ("Citrus Diseases and Their Control"), "Chlorosis is a general term applied to a condition of citrus leaves in which, instead of the normal green, there is a yellow, light yellow to almost white color. Chlorosis of one kind or another," advises Prof. Fawcett, "probably occurs in all countries where citrus is grown. It is apparently a nutritional or physiological condition, the causes for which are still involved in much uncertainty. In some cases, it is probably due to inability of the leaf to get sufficient iron; in others, it is probably related to inability to get other elements, as calcium, magnesium or potassium, and, in still others, is related to excessive amounts of certain elements taken up by the plant."

Mottle-Leaf in Citrus.

Mottle-leaf is a partial chlorosis in which appear irregular spots between the lateral veins on both sides of the midrib of the leaves. Lack of calcium is supposed to be one of the main causes of mottle-leaf, although there are many contributing factors which it is possible may bring about the mottle-leaf condition.

"Where citrus trees suffer with mottle-leaf or chlorosis for any considerable length of time, a premature falling of foliage usually results, especially at the tips of the branches which gradually die back from the ends. This occasions large amounts of dead and weak wood on the outside of the trees and gives them a bushy, unhealthy appearance," ad-

vised Burgess and Pohlman. "This condition may or may not be the true die-back, or citrus exanthema, but its effects are the same . . . small yields and poor quality of fruit."

Calcium Carbonate Present.

"The term chlorosis," writes Prof. Fawcett, "more specifically applied to citrus it is a condition in which a complete or nearly complete yellowing spreads rather uniformly over the tissue of the entire leaf. This type is found on soils underlain with marl or limestone. It has been observed that wherever the pronounced chlorosis of this type occurs in California, there is also a high percentage of calcium carbonate in the soil—to the extent of producing effervescence when weak acid is applied to it. In severe chlorosis, all the leaves lose their green color and become colonial buff to Reed yellow. In this type of chlorosis, the veins appear to be the last to lose their green color."

Theories of Cause.

Before passing to the experiments carried on in Arizona let us get before us the theories advanced as causes of chlorosis. The general, suspected causes are outlined above. "The type of chlorosis on soils underlain with marl or limestone," Fawcett advises, "is probably due to the inability of the tree to get sufficient iron, an element essential to the formation and activity of the chlorophyll."

Lipman gives this explanation: "The presence of excess of lime as calcium carbonate brings about an excess of alkalinity (hydroxylion) around the soil particles. Nitrogen starvation may bring on a yellowing sometimes spoken of as chlorosis of a more gradual, less severe type, which is more easily corrected than the other."

Control Methods.

It has been stated that the application of manure or bulky organic matter to soils high in calcium carbonate, or the planting or cover crops in such soils in order to maintain the process of decay has proven practical to control chlorosis on such soils. The decaying process seems to have a solvent action upon the iron and likewise produces carbon dioxide, resulting in bringing the iron into solution and affording an adequate supply

for the formation of green matter in the leaves formed thereafter. No tangible corrective effects are noted in leaves that matured while chlorotic but the new growth is evidently remedied by the new available supply of iron.

Use of Iron.

Iron compounds applied to the soil have not proved corrective where chlorosis is related to high alkalinity, due in part to the fact that the "precipitation of iron in soils of high alkaline reactions," Prof. Fawcett sets forth, "takes place so rapidly that it is usually not available to the tree." Injections of iron sulphate into citrus trees is reported, by Lipman, to have been a corrective of chlorosis.

In considering the matter of making iron available to the tree, Prof. Fawcett brings out this point: "Most soils have already an adequate supply of iron if the conditions are such as to bring it into solution. The use of the proper amount of manure, bulky organic matter or cover crops helps not only to make the iron soluble, but supplies nitrogen for making growth and for correction of partial chlorosis due to nitrogen starvation."

Care should be exercised, however, not to use too much of certain kinds of organic nitrogenous fertilisers on certain soils, according to Prof. Fawcett, inasmuch as exanthema and other disorders have been found to be associated with such excesses.

The Arizona Situation.

With the above discussion of the probable causes of chlorosis and the control measures recommended by Fawcett and others before us, let us briefly consider what conclusions were arrived at through the experimental work carried on in the Arizona citrus district. The work divided itself into both laboratory and field treatments, together with field moisture studies and greenhouse experiments with relation to both Salt River Valley and Yuma Mesa soils.

To get a clear picture of this work one should also remember that citrus culture has been carried on in Arizona for over forty years; that the early plantings were virtually free of disease; and that about ten years ago the older groves began to deteriorate with resultant lower yields and the usual symptoms of yellowing foliage and the presence of unusual quantities of weak and dead wood. A pathological study of the trees in eight diseased areas revealed the fact that chlorosis and a variety of dieback were prevalent. This, in short, was the problem before the

investigators. The results of their work—their conclusions were as follows:—

Field Treatments.

Field treatments were of two kinds: (1) the utilisation of fertilisers as a possible source of control of chlorosis, and (2) soil moisture control as a control factor of chlorosis. The fertiliser treatments apparently ended with negative results; the moisture control experiments resulted in positive and beneficial knowledge.

Fertiliser Results Negative.

"While the fertiliser experiments," write Burgess and Pohman, "involved much labor and expense, the results appear to have been largely negative. Although negative results are less valuable than positive results, they are useful in two ways: First, they point the way for future research, and second, they eliminate factors which otherwise might be considered as operative. For instance, here it is evident that the deterioration of these groves has not been due primarily to a lack of either organic matter or available plant food materials, for these, when supplied in abundance showed little benefit over a period of three years. The same statement is true for the clay-coagulating materials where applied."

Accepting these conclusions as given by the experimenters, let us consider the field moisture studies which it is believed secured positive and beneficial results in the control of die-back and chlorosis. Work was done on both Salt River Valley and Yuma Mesa soils. With reference to the former, the authors explain:

"The groves in the Salt River Valley were not permitted to dry out nearly as much as the writers desired and constantly advocated. Water was often applied by those in charge against our advice and when the available water in the second, third, and fourth feet would have been ample for the needs of the trees for several weeks in advance.

"At no time during the eighteen months while this work was in progress did the moisture percentage in the surface soils drop to the wilting point, and in the third and fourth feet a state of near-saturation was usually maintained. Under these conditions little benefit could be expected from the moisture-control work, and little was actually accomplished. When otherwise healthy trees take on a pale, yellowish color and production drops off, too much water is usually the answer. Especially is this likely to be the case where

temperature and plantfood conditions are found to be near the optimum.

Use Less Water.

"Our work on the Yuma Mesa was much more successful. Our advice was usually followed carefully with the result that to-day they are using successfully less than one-half the water applied formerly. The groves look very much better and the trees are rooting more deeply. Instead of irrigating "by the calendar" every two or three weeks as was previously the custom, water is now held off for periods of from five to seven weeks, even during the hot summer months, and apparently with beneficial results.

"The trees here were required to reduce the available water nearly to the wilting point before a succeeding irrigation was given. On the Yuma Mesa we accomplished the main objects of controlled irrigation which are to supply water only when actually needed and in amounts which permit of little waste below the root zone. During the early part of the work some of the trees were allowed to wilt slightly before water was supplied. Following these tardy irrigations, where the soils had been dried out to the proper point, much fuzzy, new growth of a fine, flossy, green color invariably came out. However, where water was applied too soon, no new growth appeared later.

"It has been found best to give a heavy irrigation (five to six inches) in basins and then allow the soil to dry down to near the wilting point before giving the next irrigation. The actual amount of water applied at each irrigation will, of necessity, vary with the soil type and can be ascertained only by analysis as the water should not go much below the root zone. Holding off the water as long as possible permits thorough soil aeration which is of prime importance to successful citrus culture."

The Aepli Experiment.

"Mr. D. C. Aepli, at the Yuma Mesa Orange Ranch, is also carrying on an experiment which should be of interest to all owners of old, rundown, chlorotic groves. While large areas of this grove have been replanted during the last three years, one ten-acre tract, the "south block," has been spared for investigation.

"The trees in this block are about 35 years old, and a great majority of them were in very poor condition before these tests were started. The leaves were light green or yellow in color, and the outer ends of all

branches were dead two or three feet from the tips. Many of the trees had but a few suckers and short branches which carried leaves at all, and these were in the centre of the tree around the trunk and were yellow or pale green in color. Very few of the trees bore fruit.

"It has been Mr. Aepi's practice to withhold water

from each tree until the small amount of foliage upon it actually wilted badly, then to throw a basin around it and give a heavy (eight or ten inch) irrigation. He has thus irrigated the whole ten acres one tree at a time as it needed it. The entire block has finally been irrigated. It was finished this spring (1928). Many of the trees had received their last irrigation more than two and one-half years ago.

Now, what happens when these chlorotic, wilted trees are given water? Many of the yellow leaves drop, but those which remain become turgid and soon "green up." A large amount of new, green growth quickly "puts out" in the centre of the tree, along the old branches, and also on the newer wood. After a few months, if the old, dead wood is cut out, a surprisingly green and healthy-looking tree results.

"The work at the Yuma Mesa Orange Ranch has not yet proceeded to a point where the rejuvenated trees have produced a crop of fruit, so it is not possible at this time to give final details. However, the work thus far looks very promising. A wonderful new growth of leaves has come out this spring on all of these old trees and they all have blossomed heavily. The dead wood has been cut out and the ten-acre block looks better now than it has for many years. If the trees carry their fruit through to maturity, a record of yield will be secured.

Reason for Control.

"The chief reason for controlling irrigation is not to save water and labor. It is to build a sturdy, healthy tree which will carry on through the years, bearing profitable crops at a minimum outlay. As stated above, many of the citrus groves in Arizona start off well, but after periods of ten or twenty years becomes chlorotic and cease to give remunerative returns. Because of the marked improvement made by citrus trees of all ages where our moisture studies have been made and directions followed, we are in hopes that, when citrus groves are properly cared for otherwise, irrigation control will make for permanent production."

General Conclusions.

"Spraying the chlorotic foliage with ferrous sulphate and manganese sulphate also was without permanent effect." Burgess and Pohlman say in conclusion: "Although a slight improvement was usually shown where both manure and double-superphosphate were applied deeply, the results of the fertiliser treatments (to control chlorosis and die-back) appeared to be largely negative.

"The field moisture-control work was extremely successful. Where the irrigation programme was changed to conform to the information secured from soil moisture studies, a remarkable recovery usually took place. After one or two years of work, several of the older chlorotic groves appear to be well on their way towards profitable production. It appears best to give a heavy irrigation (five or six inches) in basins and then allow the soil to approach closely to the wilting point before another irrigation is given. This gradual drying-out between irrigations permits of thorough soil aeration, which is of great importance in citrus culture."

In connection with greenhouse experiments, it was concluded that, with Grapefruit seedlings, an excessive amount of calcium carbonate in the substratum would produce chlorosis but that organic materials when properly applied would alleviate the condition. Peat and mulch gave best results. Lucerne and manure were second in value.

IMPERIAL FRUIT SHOW LIMITED.

The Imperial Fruit Show Limited has been formed to take over from the Imperial Fruit Show Committee the financing and organisation of the Imperial Fruit Show held annually in different centres in the United Kingdom. The share capital is £2,000 in 2,000 fully paid shares of £1 each, carrying a maximum rate of interest of 5 per cent. per annum. It has been agreed between the Imperial Fruit Show Committee and the Society that the Society shall take over from the said Committee all assets, and indemnify the said Committee against all claims and liabilities (if any) incurred by them in connection with the said shows. Application forms for these shares are obtainable from the Secretary, Imperial Fruit Show Ltd., 5 Bloomsbury Square, London, W.C., England.

EMPIRE EXHIBITION, CARDIFF.

Australian Products Prominent.

The Empire Exhibition held at Cardiff, England, on October 30 to November 10, 1928, was opened by the Right Hon. L. S. Amery, M.P., the Secretary of State for Dominion Affairs and for the Colonies. Assembled in the Empire Marketing Board's pavilion were the products of a quarter of the globe—Canada, Australia, New Zealand, South Africa, Irish Free State, South Rhodesia, India and Great Britain—and a well-arranged display showing what part of the Empire the various products came from.

A number of Australian products were featured at the Australian stand, including sultanias, raisins, canned Peaches, Pears and Apricots.

COVENT GARDEN TO BE ENLARGED.

Opera House to be Demolished.

We understand that the Covent Garden Properties Co. Ltd., the present proprietors of Covent Garden Market, London, have decided on the early demolition of the old Covent Garden Opera House, which is part of their property, in order to provide for a badly-needed extension of the actual market area, states the "Gardeners' Chronicle," London.

The site of the Opera House will probably be utilised as an extension of the foreign fruit market, at present accommodated in a building known as the "Floral Hall," which has never been used as a flower market, although built originally for that purpose.

It is also proposed to remove the present Foreign Flower Market westward, to use this area as a roadway, as formerly, the approaches to the market being seriously and increasingly congested. The inward tonnage of produce to Covent Garden in 1910 was 359,537, but in 1928 it was over a million.

The time has arrived when some drastic step must be taken to increase the accommodation and the old Opera House has to go. It was built first in 1733 and rebuilt 60 years later, but was destroyed by fire in 1808, this third structure being also burnt to the ground after a ball in 1856. The present building, designed especially for Italian opera, was opened in 1858, the "Floral Hall" being sometimes utilised for promenade concerts.—"Gardeners' Chronicle."

Plum Growing—Its Present Position.

Causes of Decreasing Production.

An Export Trade Should be Developed.

(By Jas. H. Lang, Harcourt, Vic.)

ONE of the most unsatisfactory fruits, from a marketing point of view, has been, during the last few years, the Plum.

It is not very many years ago since the Plum was among the leading fruits grown in the Doncaster district, but here, as in most other Victorian districts, the new plantings have failed to compensate for the trees that have gone out from various causes.

According to the "Census of Fruit Trees, 1926," the proportion of non-bearing to bearing trees of the various varieties of fruit, was: Apples, 33 per cent.; Pears, 30 per cent.; Oranges, 70 per cent.; Mandarins, 120 per cent.; Lemons, 50 per cent.; Apricots, 17 per cent.; Cherries, 26 per cent.; Plums, 25 per cent.

It may be reckoned that a proportion of at least 25 per cent. of non-bearing trees is required to replace the wastage of the bearing from year to year, so that on these figures the Plums are just about holding their own.

In the census, however, Plums and Prunes are grouped under one head, and it is in the Prune varieties that the greatest increase of plantings has taken place.

The central district accounts for 53 per cent. of all Plums and Prunes grown of which 20 per cent. are non-bearing; while the northern district grows 30 per cent., mostly Prunes, of which 45 per cent. are non-bearing.

The quantity of Prunes grown materially affects the Plum position when, as was the case this year, Prune making being unprofitable, they were processed for jam, thus coming into competition with the ordinary Plums.

The reason for the decline in Plum production is undoubtedly the poor financial return from this fruit. There are very few Plum orchards that are producing year in year out a crop of four tons (176 bushels) to the acre.

The average return at the factory during the last ten years has been about

£7 per ton,

showing a gross return of £28 per acre.

When we deduct from this the cost of production and transport, there is

not sufficient to recompense the grower. These figures compare favorably with those of U.S.A., where, according to the secretary of the Pear Growers' Association, the return per acre for Plums varied from £37 in 1920, to £12 in 1926, the average for an eight-year period being £21/9/2, or less than cost of production.

The unsatisfactory position of the Plum market was aggravated by the price war

between the proprietary and co-operative jam companies. The co-operative were willing to meet the grower and pay a fair price, but their operations were hindered by the proprietary companies, which did not declare a price until the season was well advanced; in the meantime buying their supplies in the markets at one shilling to eighteen-pence a case. As all companies have to sell on a common market, one cannot afford to incur any large increase in costs.

The price of labor in the jam factories is fixed by the Arbitration Court and Wages Boards; the price of sugar is fixed by the Federal Government; the only item of costs with which the companies can juggle, is the price of the fruit, and the grower suffers.

There has also been, during late years, a decrease in the consumption of jam, due in a large measure to the high price of sugar,

which keeps the price of jam at an unnecessarily high level

This applies not only to the jam-making companies, but also to the housewife, whose jam making activities have also been curtailed.

The growers have no doubt been lax in the past in not looking for other outlets for Plums.

South Africa has developed a good export trade

with England and though our distance is greater, there is no reason why we should not do likewise. It has been proved that the market is there, and that our Plums will carry and arrive in good condition. The s.s. "Argyleshire," sailing from Melbourne on February 18, 1914, carried 2,387 half cases of Plums, which sold at an average price of 12/9½ per bushel case. The highest price being 17/- per half case for two half cases

of Blood. The principal varieties were 190 half cases Grand Duke, average price 9/- half case; 150 Lawford's Gage, 7/-; 1,200 Coe's Golden Drop, 6/-; 294 Diamond, 4/8.

As this was the season prior to the beginning of the war, the shipping facilities did not exist for the trade to be followed up. It is full time, however, that growers should again be looking to this market. A consignment of Plums was sent on the "Mooltan" in February last, it is to be hoped that this will be a forerunner of many future shipments that will open up a profitable outlet for a proportion of our Plum crop.

PRICE OF SUPERPHOSPHATE.

Comparison with Other Countries.

A statement setting out the comparative costs of superphosphate in various countries was given by the Prime Minister (Mr. Bruce) in reply to a question by Mr. Killen (N.S.W.) in the House of Representatives, on March 11. This set out the following prices and qualities:—

New Zealand, quality 20.5 per cent. phosphoric acid, price free on rail North Island works, £5 a ton for terms and £4/17/6 a ton cash. For the last three months these prices have been reduced by 7/6 a ton. At South Island works, £5/15/- a ton on terms and £5/9/3 for cash.

United States, quality 18 per cent. phosphoric acid, price from works £3/2/7 a ton in bulk.

South Africa, quality 17 per cent. phosphoric acid, price from works £3/3/- a ton.

Australian, quality 20.5 per cent. phosphoric acid, price in Victoria, South Australia, and Western Australia, £4/19/- to £5/5/- on terms, and £4/17/6 cash; New South Wales, £5/7/9 terms, £5/4/9 cash; Tasmania, delivered to nearest railway station, £5/17/6 terms and £5/14/6 cash.

SAVING AN HOUR.

Old Farmer Tightmoney wasn't exactly stingy, but mighty economical. One day he fell into the underground tank. The water was over his head and cold, but he could swim. His wife, attracted by his cries, yelled excitedly down to him, "I'll ring the dinner bell so the boys will come in from the paddocks and pull you out." "What time is it?" the farmer called up.

"'Bout eleven o'clock."

"No, let 'em work till dinner time. I'll just swim around till they come."

Constructing the Air-Cooled Apple Storage.

Some Interesting Suggestions.

The increased importance of local and roadside marketing of fruit and fruit by-products during the last 10 years has stimulated an interest in the storage of Apples on the farm. Many small growers have found that by using an air-cooled storage they have been able to hold their fruit at the orchard until the entire crop could be marketed locally, thus realising a considerably higher price for their Apples than if it had been necessary to dispose of the entire crop immediately after harvest. Thus writes Clarence E. Baker (Purdue Experiment Station), in "American Fruit Grower Magazine."

Many large commercial orchardists have found it profitable to maintain a retail sales room at their orchard, or at some convenient point along a prominent motor highway. This change in the method of marketing, together with mounting freight, handling and cold storage charges, has made the development of the farm storage almost a necessity, where Apples provide main income.

The greatest limiting factor of the air-cooled storage is its dependence upon the weather. During the winter months it is possible to maintain a temperature that compares favorably with that of a commercial cold storage. During the warm weather of early autumn, however, it is difficult to secure a temperature at which Apples will keep in a satisfactory condition. This fact should be understood by those who are contemplating the construction of an air-cooled storage. Due to this limitation, it is unwise to depend too greatly on such a storage for holding large quantities of early autumn varieties, such as Grimes and Jonathan.

The requirements of a farm Apple storage may be fulfilled in a very economically constructed building. Frequently a barn or other building may be converted into a very efficient storage. One grower has, with a very small expenditure, remodelled an abandoned brick school house into a satisfactory Apple storage, packing house and sales room.

If it is deemed advisable to erect a permanent and more elaborate structure, the storage may be made a thing of beauty by the use of higher grade materials. In such a building, a packing house and sales room are

frequently included. Even an attic above for the storage of ladders packages and other orchard supplies may be added at a small additional initial cost.

Construction Materials.

Due to the constant dampness present in an Apple storage, wood has a comparatively short life unless it is treated to withstand moisture. This is especially true in the cellar storage.

Solid concrete, concrete blocks or glazed hollow tile may be used to advantage in the construction of storage walls. The interlocking type of hollow tile are very satisfactory, where they may be secured near enough to a source of supply that freight charges do not make their cost prohibitive. Well-designed hollow tile combine supporting strength with insulating value and are pleasing in appearance and make a strong, lasting wall.

The amount of insulation necessary and the way in which it is used depends upon the type of storage under consideration and the degree of efficiency expected from the selected material.

Air-cooled storages usually take the form of a cellar, an above-ground structure or a combination of the two.

The cellar storage

is generally placed in a bank with three sides surrounded by soil and one side exposed. The exposed side should not face the direct rays of the sun. A portion of the fourth side may be surrounded by soil.

Such a building, with solid masonry walls, is constantly radiating a soil temperature of 52 to 55 degrees Fahrenheit into the storage room, due to the fact that masonry walls in contact with the soil rapidly assume the temperature of the soil.

Unless the walls and floor are insulated, it is difficult to secure satisfactory storage temperatures until very cold weather prevails. In spite of this fact, however, little insulation against ground temperatures is cus-

tomarily used in this type of storage.

Storages built

entirely above ground

must be thoroughly insulated to prevent the transfer of heat in warm weather. It is exceedingly important in any type of storage that all doors, windows, air intake and outlet covers fit tightly, so as to preclude the possibility of any air leaks around them.

Light is detrimental

to the keeping quality of Apples, so if artificial light is available, windows should be dispensed with. The room should be kept dark except when working in the storage.

To possess a high insulating value, the material must contain a large number of small air spaces per unit of volume, and it must remain dry. Unglazed tile, unprotected concrete, soft brick, wood or soft plaster are not efficient insulating materials unless they are treated to withstand moisture. Damp or green sawdust or shavings are undesirable as they are likely to heat, sometimes even causing spontaneous combustion. Either will decay rapidly and settle when subjected to moisture. Crushed cinders make an excellent material for use in walls, between floor joists or other places where insulation is needed. They do not decay, are fire-proof, do not absorb moisture readily and settle very slightly if well packed. The cinders should be finely crushed so that they will pass through a one-half inch screen. Dead air spaces do not provide as much insulation as is the common opinion. Unless the long vertical air spaces between studs are broken by inserting cross pieces at frequent intervals, convection currents are likely to arise which serve as a means of conducting heat across the so-called "dead air" space. Corkboard is one of the most efficient insulating materials available, but is quite expensive when first cost alone is considered.

Insulation is also available in the form of rigid fibre boards such as Celotex, Insulite, and other prepared materials. These materials usually are made from sugar cane or wood fibres pressed tightly together into the form of boards or sheets of considerable size, generally about one-half inch thick. Besides having efficient insulation properties, these fibre boards have considerable structural strength and when properly protected from moisture and rodents, they form practical building materials and may be secured at most timber yards.

Large Air Intakes and Outlets Necessary.

The temperature of an air-cooled storage is regulated primarily by ventilation, consequently ample provision must be made for moving large quantities of air through the building. The air intake openings must be large and numerous. Many storages have been constructed with too few and too small air inlets to make possible thorough ventilation.

In the cellar storage, the air inlet openings are usually made through the wall beneath a false floor on the exposed side. On the sides surrounded by soil, ducts are provided opening at the ground level and running down the outside of the wall to the floor level, where they enter through the wall beneath a slated false floor. In above-ground buildings, a window-like opening is provided through the wall just above the ground. The openings should be rectangular and at least 18 by 24 inches. Enough such openings should be provided to furnish one square foot of intake opening for each 500 to 700 cubic feet of storage space. These openings are generally spaced at regular intervals about the building. All openings should be screened to exclude rodents and should be provided with tight-fitting insulated doors.

The outlet flues must be of generous size and should lead directly from the ceiling of the storage to the peak of the roof where a ventilator cover or cowl is placed. The flues should have a diameter of at least 24 inches and may be either round or square. If made of wood, it is well to make them of double thickness of one inch material with heavy building paper between, keeping all cleats or braces on the outside. Their number should be such as to provide a total outlet opening equal to 60 to 65 per cent. of the intake opening area. Doors or dampers for closing these flues must be included.

Electric fans or blowers are frequently used to increase the volume of air moved through the ventilating system. These may be used to force in the cold air or to exhaust the warm air.

The false floor usually is constructed about 18 inches above the ground floor and is made from two by two or two by four inch strips placed about one inch apart. The idea is to make possible the movement of air beneath the stored fruit and up through the stacks in all parts of the air will move from air intake to air outlet by the most direct and least obstructed route, the poorly ventilated room. If it is remembered that

tilated locations for any particular storage may be easily determined.

The ideal construction of a storage house should be such that once the fruit is cooled down there will be very little change in temperature when the ventilating system is closed. This means that the building must be well insulated and that all doors, intake and outlet covers fit tightly and are of a sufficient thickness to prevent the transfer of heat. These points are a little more easily incorporated into an above-ground building than one of the cellar type. The cost of excavating, when a natural location is not available, is another item against the cellar storage. Additional insulation may raise the cost of the above-ground building to about the same level, and consequently these and other factors must be balanced against each other in determining which type of building to erect.

MANGANESE ESSENTIAL TO GROWTH OF PLANTS.

The Department of Agriculture, U.S.A., has discovered that manganese is essential in the manufacture of the green color in plants, the chlorophyll, by the aid of which the most important processes of plant growth operate, it was stated by Oswald Schreiner, in charge of the Division of Soil Fertility, in a review of research on the necessity of the chemical and its absence in some soils. The review in full text follows:—

Recent research has shown that manganese is essential to plant growth. It has been rather generally believed that only ten chemical elements were essential, and that the element manganese was merely an accidental constituent of plants, and played no part in their growth and development. It is now known that this element is important in the production of the green color of plants, the chlorophyll, through which the most important plant processes of growth take place.

Manganese is an element like iron, and almost as widely distributed in nature. That its compounds are necessary to proper plant development has been demonstrated by carefully controlled experiments. The question might be raised: "Has this scientific knowledge of the fact that manganese is essential to green plants any practical significance?" The answer is: "Yes." The recent observation that manganese may be so deficient in certain soils as to hinder or prevent the proper growth of crops brings the economic importance of this discovery to the attention of the man on the farm.

Most soils contain some of all the important mineral elements of plant foods; but in practical agriculture it has been found increasingly necessary for economic production of crops to supplement this native store of plant-food elements with added mineral fertilisers. In the future attention will be given to the addition of manganese to such soils as can now be shown to be deficient in this element. An illustration of this is a rather peculiar soil found in Florida. This soil consists essentially of calcium carbonate, which in ages past was deposited from sea water.

The conditions prevailing then, and those prevailing now, have not permitted the deposition or accumulation of manganese to take place in the soil in more than traces, hence a soil deficient in manganese has developed. The use of mineral fertilisers alone, even in very large applications, does not give the desired results; and it is well known by the growers of Tomatoes in these sections (more than 10,000 acres are involved) that manure which is obtained from far-away points in the Mississippi Valley and elsewhere is absolutely necessary in addition to the ordinary fertiliser salts. The reason is now very plain. The manure contains manganese. This manganese was taken upon by the plants and grain which grew on the soils of these other regions where manganese is more plentiful.

Carefully controlled experiments in the greenhouse and field show that the Tomato plants without manganese grow poorly. The leaves become chlorotic—that is, they turn pale green and whitish spots appear on them, and the blossoms and fruit are scarce or absent, even when an abundance of fertiliser is used. The use of small quantities of manganese (as little as 50 pounds per acre in the form of manganese sulphate) causes the leaves to assume a green healthy color, and an abundance of blossoms and fruit results.

Where manganese sulphate was applied with the ordinary fertilisers the increase, in some places, amounted to about 200 crates of Tomatoes per acre, an increase of about 60 per cent. This illustrates the difference between failure and success in Tomato-growing.

This is an illustration of the application of the results of research to the problems of the practical grower. No doubt many other problems regarding equally mysterious failures of crops could be solved by the application of this new knowledge.

Australian Canned Fruit Industry.

Report by Development and Migration Commission.

"Reorganisation and Amalgamation of Co-operative and State Canneries Essential."

Government Assistance, £2,000,000.

Reduction of Costs Necessary, and Development of New Markets.

THE Development and Migration Commission's report on Australia's canned fruits industry, reveals a study of this branch of production—its history, position, difficulties and prospects—that is comprehensive and thorough. The facts and features of production, canning and marketing are brought under review in detail and careful examination is made of each factor that is of importance and interest to the general public as well as to the orchardists and canners. The recommendations indicate a definite working policy for the future. The report deals only with canned Apricots, Peaches and Pears.

Numbers of Growers and Employees.

Fruits suitable for canning—mainly Apricots, Peaches and Pears—are grown in various districts in Victoria, New South Wales, South Australia and Tasmania. It is estimated that in Victoria and New South Wales there are 681 and 606 growers respectively, partially or fully employed in canned fruits production. In South Australia and Tasmania there are no concentrated areas producing fruits for canning. Orchardists in those two States forward their fruit to buyers, agents or representatives in the capital cities, and it is there selected for use according to its suitability. As a result of its investigations the Commission considers that if fruits for canning were produced by growers devoting the whole of their energies to that enterprise, between 300 and 350 growers could have supplied all the fruits required for the 1927-28 pack, which was a record.

The number of persons employed wholly or part time in orchards—apart from owners—is difficult to determine, but during the canning season, which lasts between four and five months, there would probably be from 3,000 to 4,000 persons employed as pickers, processors, and in transport and other services.

Production and Growers' Earnings.

During the 1927-28 season, 33,587 tons of fresh fruit were processed, yielding a pack of 3,244,186 doz. 30 oz. tins. The value of this pack was approximately £1,350,000. As the newer areas come into production—if the product can be successfully marketed—the value of the pack may approximate £2,000,000 per annum. Including fresh and dried fruit, the present gross turnover of the industry is probably between £1,500,000 and £1,750,000 per annum. From enquiries that were made with a view to determining the orchardists' returns, it was evident that costs of production vary considerably in different districts, and even in the same districts, owing to soil variations, climatic conditions, the effects of pests and the wide differences in the size of individual orchards. The Commission, has, however, prepared estimates based on standard orchard practice and figures taken from records of some of the growers in the Goulburn Valley.

These estimates indicate that after paying all costs, including interest on capital, a grower with 25 acres in bearing who obtains four tons of peaches, four tons of Pears and three tons of Apricots per acre would have approximately £26 for his labor income if he received £8 per ton for his fruit and £211 if he received £10 per

ton for his fruit. If his yields were six tons of Peaches, five tons of Pears and four tons of Apricots per acre, he would receive, at £8 per ton, £106, and at £10 per ton, £368 for his labor income. A yield of eight tons of Peaches, six tons of Pears, and four tons of Apricots would give him, at £10 per ton, £640 for his labor income. The estimated yields of the different kinds of fruit cover the following range:—

Apricots, from 2 to 5½ tons per acre.

Peaches, from 2 to 15 tons per acre.

Pears, from 3 to 6 tons per acre.

Government Assistance—£2,000,000.

When read in conjunction with these figures showing the numbers of growers and part time workers, the value of the production and the debit costs to the average grower, together with estimates of his returns, the figures setting forth the amount of assistance given to the industry by Commonwealth and State Governments have a special interest. From 1920-21 to 1927-28 inclusive, when production had largely increased as a result of State Closer Settlement schemes, the Commonwealth Government met losses on Government fruit pools and paid bounties and subsidies amounting in all to £890,759. The cost to the Commonwealth and the liabilities and losses incurred by State Governments through expenditure or guarantees, excluding the value of certain substantial concessions, is set down at upwards of £2,000,000. On this important question the Commission's interesting summary and conclusions read:—

"The story of the operations of the non-proprietary canneries reveals the extent to which the industry is out of balance economically. The Government of New South Wales has become involved to the extent of approximately £500,000 directly and to a very large sum indirectly. Under present conditions there is no indication either of a satisfactory return on this outlay or of provision for the recovery of the losses. The Government of Victoria, apart from capital expenditure incurred in making the canning fruit growing areas possible for this purpose, has guaranteed approximately £750,000 in connection with processing the produce. Against this figure there are assets in plant, stock, stores and buildings. The Commonwealth Government in order to assist the industry has expended £890,759 in the past seven years. In addition very substantial concessions, the sum total of which is not possible to estimate, have been granted per medium of reduced charges for essential services, and the financial position of the Irrigation Commissions of New South Wales and Victoria as landlords and suppliers of the water must be giving serious concern to their Governments. Yet the plight of the industry is to-day worse than ever."

Australian and Overseas Markets.

In past years the Australian market has absorbed on an average 70 per cent. of the pack, but in a year such as 1927-28, when production exceeded that of any previous year by nearly 1,000,000 dozen 30 oz. cans, it will probably be impossible to sell in Australia in the year

of production more than 50 per cent. of the pack of Peaches and Pears, and perhaps between 60 and 70 per cent. of the Apricots. Australia supplied on an average—between 1922 and 1927 inclusive—about 6 per cent. of the British imports of canned and bottled fruits. The U.S.A. is by far the largest supplier, averaging approximately 88 per cent. over the same period.

Australia's present annual consumption is 18,000,000 cans per annum, and this is capable of an increase, so that on the 1927-28 record figures, Australia in years of similar high production, may be faced with the necessity of exporting up to 40 per cent. of the pack, which is equivalent to 17.56 per cent. of the average British imports for the six years from 1922 to 1927. The U.S.A. canners, it is observed, have considerable advantages over the Australian because 80 per cent. of their pack is consumed in U.S.A., and only 20 per cent. exported, whereas the proportion to be exported from Australia for some years to come will probably reach 40 per cent. of the pack. Further, the U.S.A. consumer buys much of the higher grades at higher prices.

United States Competition.

Australia's canning fruit industry, it is observed, is conducted in circumstances not more favorable than those in overseas countries, and in certain respects it is handicapped as compared with competitors abroad. The prime condition of its continued existence as an export industry, therefore, is its ability to produce quality for quality, and at price for price in the markets in which it seeks to secure a footing. In the early stages of rapid development this fundamental truth was not fully and generally appreciated. Consequently, the easier method of resort to artificial assistance has been adopted rather than maximum effort being made to lower costs of production to a point where the industry would stand unaided. As a result, public moneys have been used by way of a palliative. There is a corporate responsibility resting upon the people of the Commonwealth as a whole.

Lessons from the Past.

In fostering the rapid development of the industry, and in anticipation of larger production, there seems to have been a want of appreciation of the necessity for:—(1) Continuous co-operation between States, particularly New South Wales and Victoria; (2) A systematic attack on scientific lines on the problems of the industry, as for instance by the institution of experimental and demonstration farms in the principal producing areas; (3) A recognition of the dangers inherent in the furnishing of financial support to industry by Governments; (4) A continuous investigation to improve the details of industry (by utilising, for instance, by-products and surplus fruit not taken or usable by the canneries); (5) Organised combined marketing in Australia and overseas, the reduction of marketing costs and the exploitation of markets other than those of Australia and Great Britain.

Amalgamation of Co-operative and State Canneries

Essential.

Re-organisation and amalgamation of canneries, it is declared, is essential. The industry requires to make a determined effort to reduce costs. The reductions necessary call for a full measure of co-operation between the Governments concerned, the canners, the cannery operatives, the growers and the orchard employees. The Commission believes that, pending increases of average yields and reduction of costs of production, any price lower than £9/10/- per ton for the fresh fruit, averaged over tonnages of the three fruits at country cannery or railway siding will not enable the grower to live at all reasonably and meet his obligations. Orchards in irrigation areas which cannot be expected within a reasonable period of

years to produce yields approximating to six tons of Peaches, five tons of Pears and four tons of Apricots to the acre as minima, must be converted to other uses if the industry is to be self-supporting or unless conditions change for the better in regard to costs, prices and markets to a much greater extent than can reasonably be expected at the moment. There is evidence that the yields in the Californian orchards, which will continue in production, are twice or thrice the present average Australian yield. Australian yields, in the opinion of Australian authorities, can be considerably increased by intensive attack and judicious elimination.

Opportunities for Expansion.

The investigation reveals three main things:—(1) That the industry is disorganised; (2) That it has come to regard Government assistance as natural; (3) That policies have been laid down without due regard to economics. It is not to be thought, the Commission remarks, that the industry has reached the limit of its export possibilities but expansion will largely depend upon the extent to which co-operation between different units of the Empire can be developed. Strong emphasis is laid upon the importance of competent independent business management. The aim should be to make industries self-supporting and capable of natural expansion as opportunity offers, and to put a period of bonuses of every kind.

The greater the freedom conferred by Governments upon industry in respect to management, and the more the responsibility for its conduct devolves upon expert management the greater is the incentive to efficiency and the better are the prospects of permanent success.

Recommendations.

The Commission's principal recommendations are:—

That all necessary steps be taken immediately by the Governments of New South Wales and Victoria and by the Board of Directors of the Shepparton Preserving Company, by conference and/or otherwise, to arrange for the appointment of an independent business Board of Management to have full control and authority over the canneries at Leeton, Shepparton, Ardmona and Kyabram, in connection with all operations associated with canning and marketing.

That by agreement, the Governments of New South Wales and Victoria, prior to the appointment of the Board of Management arrange to transfer to Suspense Accounts all accumulated working and trading losses, and any capital losses against Leeton, Ardmona and Kyabram canneries, proved to exist, and which may be regarded as an undue burden upon the satisfactory operation of these canneries as going concerns.

That the Government of Victoria agree to provide the Board of Management, directly or by guarantee, with the necessary finance for the operation of the canneries at Shepparton, Ardmona and Kyabram, and that the Government of New South Wales do the same in respect of the cannery at Leeton.

That the expenses of the Board of Management be distributed pro rata over the canneries.

That the Board of Management be requested to prepare within a period of two years from the date of its appointment, and submit for the consideration of the Governments concerned and of the industry, a scheme for the complete amalgamation of the four canneries concerned into one co-operative company, providing for the eventual elimination of Government control and assistance.

That the Government of New South Wales arrange with the Water Conservation and Irrigation Commission to consider the desirability and necessity of taking steps to enable a Commissioner or officer with sufficient staff to de-

vote his full time to the problems connected with the production of the fruit in the irrigation areas, during the period of reorganisation; and that the Government of Victoria make a similar arrangement with the State Rivers and Water Supply Commission.

That a Committee be appointed, representative of the responsible Government authorities, namely the Irrigation Commissions, the Departments of Agriculture, and of the business Board of Management of the canneries, to confer at frequent regular intervals on all matters associated with the problems of the industry, on the lines detailed in the report.

That the Board of Management of the canneries determine and announce as early as possible in each year, and before the beginning of the canning season, the price which it proposes to pay for each variety of fruit at each cannery, and that the Board of Management base these prices upon calculations designed to prevent losses in connection with the operations of each cannery. Further, that following on the declaration of these prices the Irrigation Commissions of New South Wales and Victoria take any action, after consultation with the Governments concerned, that may be considered desirable.

That the Commonwealth Government, if it decide to give assistance, grant it for a period covering three seasons on a reducing scale, provided a satisfactory scheme of organisation be adopted and made effective.

That the Commonwealth Government consider the advisability of arranging for an investigation into the effects of the present Commonwealth sugar policy on fruit, jam and other industries utilising sugar in Australia for Australian consumption and for export.

That the Commonwealth Government consider requesting the Commonwealth Department of Markets and

Transport to arrange for a conference of State Government authorities to discuss the organising of marketing and distribution in each State, with a view to assisting in the disposal of temporary surpluses of fresh fruit in and throughout Australia.

That the Commonwealth Department of Markets and Transport arrange with the State Governments concerned for the taking of a special census in all the areas in Australia where Peaches, Pears and Apricots are grown, for purposes outlined in the report, and that pending the completion and consideration of this census, further plantings of new areas of Peaches, Pears and Apricots be suspended.

That the Board of Management and the Governments concerned consider sending abroad one or more specialists immediately, to make a complete survey of the industry from all aspects, in North America and Europe, for the information of the Governments concerned and the Board of Management.

That the Governments concerned take immediate steps to provide experimental and demonstration orchards in the irrigation areas.

That the Board of Management confer with the Hardwood Timber Industry of Australia, with a view to the utilisation of seasoned hardwood cases to the greatest possible extent in the canned fruits industry.

That the Board of Management institute as early as possible technical investigations with regard to the utilisation of surplus fruit and the production of by-products, and that the irrigation authorities and the Board of Management arrange for a conference of all sections of the industry and representatives of the employees in these sections for full and open discussion regarding the problems of the industry.

BOUNTY ON CANNED PEACHES.

Conditional Offer, 1/6 per Dozen.

The Minister for Markets, Hon. T. Paterson, announced a qualified commonwealth offer of an export bounty of 1/6 per dozen 30 oz. tins of Peaches of the 1928-9 pack.

The offer is conditional upon the acceptance of the recommendations of the Development and Migration Commission for the re-organisation of the canned fruits industry. In the event of the State Ministries declining to accept the condition, the Commonwealth bounty will be reduced to 1/- per dozen tins, the amount originally offered.

The conditions included the appointment by the Government of New South Wales and Victoria of a Board of Management to control the canneries at Leeton, Kyabram, Ardmona, and Shepparton.

The State authorities will be obliged to transfer to suspense accounts before the appointments of the Board all accumulated working and trading losses and also any proved capital losses. The Victorian Minis-

try will be required to guarantee the Board of Management financially for the operation of the Shepparton, Ardmona, and Kyabram canneries, and the New South Wales Ministry will have to guarantee the Leeton cannery. It will be the task of the Board of Management, if appointed, to prepare within two years plans for the complete amalgamation of the four canneries into one co-operative company able to dispense with Government assistance.

Standard Must be Improved.

Other conditions relate to the appointment of advisory authorities, the

fixation of the price to be paid for fruit before each canning season, and the improvement of the standard of fruit processed for home consumption to the level required by the Commonwealth for export. Commonwealth assistance to the industry, it is understood, will be for three years on a reducing scale if a satisfactory re-organisation is brought about.

The cost of a bounty of 1/6 a dozen tins on Peaches is said to be about £60,000.

There will be no bounties on Apricots or Pears.

EXPORT OF CANNED FRUIT.

Season 1927/28.

The exports of canned fruits from Australia to various destinations for the season 1928, were as follows:—

Destinations.	Apricots.	Peaches.	Pears.	Total.
	Doz. 30 oz.	Doz. 30 oz.	Doz. 30 oz.	Doz. 30 oz.
United Kingdom	116,457	571,287	175,880	963,624
New Zealand	45,676	86,516	6,588	138,780
Canada	4,554	40,852	3,752	49,158
The East	2,883	6,731	4,542	14,156
Miscellaneous	2,040	3,848	2,717	8,605
Totals	171,610	709,234	193,479	1,174,323

Editorial Chats



The Canned Fruits Industry.

THE summary of the report of the Development and Migration Commission relative to the canned fruit industry, published in this issue, provides much food for thought.

The full report which has since come to hand is voluminous, revealing the thorough manner in which the Commission has investigated the industry. It is frankly admitted the industry is in "a serious plight," notwithstanding all the efforts which have been made for stabilisation.

One of the major recommendations is for the appointment of a Board of Management to have full control over the canneries at Leeton, Shepparton, Ardmona, and Kyabram.

Following this recommendation came the announcement that the Federal Government would agree to give a bounty of 1/6 per dozen 30oz. tins of Peaches exported, conditional upon, the acceptance of the Commissions recommendations, otherwise the bounty would be 1/- per dozen tins—the original offer.

This subject of amalgamation is receiving close attention by growers and co-operative cannery directors, but the indications are that the proposal will not be accepted.

Several reasons are suggested, one being that the proposed amalgamation would be in the nature of an experiment and would not go to the root of the trouble.

Instead of canning mid-season varieties of Peaches, such as Nicholl's Orange Cling, Tuscan, Phillip's, Goodman's Choice, and Golden Queen, which come in at the same time as Williams' Pears, growers suggest that more attention be paid to the canning of Pears, which are profitable both on the Australian and British markets. By not canning mid-season Peaches, the factories could work full time on Pears, and canning the Peaches only when Pullars are ready.

It has always been considered that a mistake has been made in the past in paying a flat rate per ton for Peaches. For instance, with Pullar's Cling, growers get 110 dozen per ton, whereas with some of the mid-season varieties only 70 dozen per ton are obtainable. With Apricots, too, there are over twelve varieties with dif-

ferent characteristics and varying times for ripening.

Improvement in the canning industry has to commence in the orchard. Balanced production would give a balanced pack both for local and export trade.

Amalgamation of the co-operative and State canneries, while effecting certain economies in overhead expenses, would not, it is thought, overcome the primary difficulty of unbalanced production.

Great Britain could take the whole of Australia's canned fruit pack and a lot more—at a price. In the process of reworking the orchards and reducing costs of production, the loss of Peaches exported might be made up by the profit on Pears.

While it is deemed inevitable that the marginal orchards must disappear, it is equally certain that many growers could produce more and better fruit per acre by better cultural methods.

In this period of depression many fruitgrowers are neglecting their manuring and spraying programmes. Some fruitgrowers will spray 100 trees from a vat with which a more careful grower would spray only 30 trees. No wonder the codlin moth is more severe in some orchards than others.

By growing more suitable varieties growers would strike the balance between the open market and the cannery, avoiding gluts, and thus securing fair market prices, and at the same time delivering the proper varieties at the canneries at suitable times, in which case £12 a ton would not be asked for. Some growers can make a good profit at £8 per ton. Regarding varieties, opinions differ, of course, and there are varying soil and climatic differences. The suggestions for balanced production would be Apricots, Tilton; Pears, Williams'; Peaches, Pullar's Cling. These would give concentration of supplies at the factory.

Apparently the road to stabilisation is a long one. The Federal and State Governments have already assisted to the extent of £2,000,000, this being separate, of course, from the many millions which have been invested in irrigation as a whole.

The Commission's report recom-

mends that the accumulated deficits be transferred to suspense account. The hope is also expressed that the industry will be free from Government auspices as soon as possible.

Growers are now suffering grave disabilities. Losses have been incurred by pioneer growers who patiently developed their holdings over the years, expanding their areas as warranted by market developments. The new phases of placing settlers on the land under Government auspices and later the entry of soldier settlers, caused the unbalanced production which is now so apparent to all.

Nine years ago at a Fruitgrowers' Conference pioneer growers in the Goulburn Valley presented a resolution urging that there be no more plantings with Government finance until markets were assured. But the plantings went on. Now not only the pioneer growers, but those who have come in since, find that production has been overbalanced.

The Commission's report recognises that "there is a corporate responsibility resting on the people of the Commonwealth as a whole," also that "the greater the freedom conferred by Governments upon industry in respect to management and the more the responsibility for its conduct devolves upon expert management, the greater is the incentive to efficiency and the better are the prospects of permanent success."

When comparing Californian conditions with Australian, it must not be forgotten that the Californian industry, growing and manufacturing, is conducted under private enterprise.

In Australia there is all too much of Government activity in commerce and business generally.

California had one noted experience with an irrigation project and settlement under Government auspices. It was a failure. The sum of £250,000 was paid in compensation to the settlers. To-day people point out where an effigy of the founder was hung from a tree on the public highway.

The Commission recommends an investigation into the sugar industry as it affects the fruit industry. Such an enquiry would be welcomed and a very effective answer would be made to the academic report by Mr. A. R. Townsend, dealing with the fruit industry as affected by the socialised sugar industry.

The Commission's report is being patiently studied. The report was expected some considerable time before it was finally issued. The suggestion that there be a cessation of planting Pears was probably written

during the time when there was a temporary glut of Pears (which it would be possible to avoid if we had balanced production). The demand for Pears this season for the local market, for export as fresh fruit and for canning, rather suggests that this section of the Commission's report is late or worthy of reconsideration.

The report of the recent British Economic Mission (the Big Four), and now the report of the Development and Migration Commission on the canned fruits industry emphasise that Governments can overdo paternalism. Industries must be developed, not under hot-house conditions, but must be sturdy enough to stand the cold blasts of economic competition. There has been too much leaning on the Government by certain secondary industries in the past. The primary producers are among the last in the field for such favors.

There will yet arise in Australia a reform party with a slogan something like this: "More business in Government and less Government in business."

ANSWER TO CORRESPONDENT.

Disease on Grapes.—"W.H." Rose-dale, Vic., writes:—I enclose a specimen of Grapes grown under glass, and would enquire if you will please tell me the cause of the cracking in same. It is general through the house. Another house adjoining this one is quite all right.

Answer (by D. Adam, B.Sc., Plant Pathologist).—A species of the fungus *Penicillium* is present on the Grape specimens submitted. The predominant presence of this fungus coupled with your account of the presence of the trouble in only one of the two houses, to my mind indicates that the trouble has arisen from improper control of the water supply given to the plants. The plants apparently have been given overmuch water at a time when they could not handle it satisfactorily, with the result that the fruit has split.

SHOWS TO COME.

N.S.W.

Royal Ag. Socy.—March 27 to April 6.
Orange.—April 16, 17, 18.
Hawkesbury.—April 18, 19, 20.

According to Dr. Flint, the idea of paper mulch originated with C. F. Eckart, manager of the Olaa Sugar Company's sugar cane plantations in Hawaii, fourteen years ago, and its success was such that shortly thereafter it was tried, also successfully, in the raising of Pineapples.

"Tasmania will Fight New Grading Regulations"

Reply by South Australian Grower

(The Editor, "Fruit World.")

Sir,—I note in your issue of March 1, that "Tasmania will fight the new grading regulations." I trust you will permit me a little space in your valuable magazine, whereby I may give a few facts pertaining to the marketing of fruit overseas.

First of all let me tell the Tasmanian grower (and any other low-grade shipper) that: "Nothing but the BEST will do." Nothing succeeds like success, and when success does succeed, how great is that success. This fact was appreciated to the full by a grower in Canada some years ago, whose initial shipment was seven cases, the very best from his orchard; his orchard grew, but not half fast enough for the demand for his most excellent fruit. At an auction of Canadian fruit in Manchester in 1919 Apples were dragging—"specials" up to 32/- per barrel; "standard" grades to 25/-, when Mr. "Seven Cases'" fruit was offered they jumped to 63/- per barrel—a parcel of 300 barrels—buyers positively fought each other in order to secure the fruit, the number called for being ten times the quantity at double the price.

"Nothing but the best will do."

This man appreciates what sound business means:—

- (1) What true commercial economy really is.
- (2) That it pays to send the BEST by grading out from his "good" fruit a "very" good, and out of that very good, an excellent class for export.
- (3) That his freight bill is cut in half and his cheque double the value: "Nothing succeeds like success."

"Plain" Grade is Rubbish.

Such a system of sound business is absolutely essential to the retention of Australia's overseas fruit trade. That trade must not be jeopardised by the inclusion of a "plain" grade which, compared with the quality other countries offer, is absolute rubbish, and rubbish indeed in the eyes of both merchants and consumers. If we permit the inclusion of "plain" in our grading, we are drawing the attention of Europe's fruit industry to a glaring incompetence and flagrant disregard for commercial progress, utterly destitute of the slight-

est appreciation of true economy in our commercial activities. "I have often said that primary producers in general and fruitgrowers in particular, are the biggest fools in the commercial world," and if we permit a continuance of this line, as advocated by Tasmania, we will very shortly see our folly when the day of commercial grace is past—when Chili—last in the field—who, at present feeds her pigs on Apples equivalent to our standard grade, will be progressing the business in which we will then be starving, enjoying the affluence which comes only by climbing to the heights of commercial success over the debris of obsolete ideas and wornout methods.

Our "special" must be such as to inspire a higher bid; not stimulate an enquiry. Are they any better than "standard," they must be a superior classification—something that "stands out;" the line of demarcation must needs be very pronounced. Our "standard" must be an honest indication of the quality that is there. If our standard of quality and honesty go together on a higher plane, we are on the progressive course; if on a low plane, we are assuredly courting commercial disaster.

We are too prone to see our fruit and grade it as if nobody else has a right to have better.

We too seldom take the pains to consider the littleness of our stock in trade and the magnitude of the other fellow's. Europe, with her 200,000,000 population is a good market for good fruit. Canada knows this better than Australia. The United States appreciates the possibilities more than Australia.

Chili, in South America, is learning from the imperfections of Australia, America (U.S.A.), and Canada. Chili will profit by our experiments and start on the road to success—a bituminous track—while we are bumping over the corduroy track of antiquity. Nothing but the BEST will do. On page 95 of March issue appears an extract from address by Mr. Don Francisco, which is well worthy of a full page of "Fruit World" in large red type:—

"More money would flow back to the orchardists if low-grade fruit were never marketed."

To these words I respectfully draw the attention of Mr. Peacock, of Tasmania. More particularly is this worthy of our consideration when we realise that the people to whom Mr. Francisco spoke these words are years ahead of the Australian Apple-grower so far as grading is concerned, and none would have the absurd ignorance as to stigmatise such a statement from such an authority as "idiotic."

During my tour of the ports of discharge and provincial centres of distribution in 1919, I have the honor and pleasure of the company of the Fruit Trade Commissioner for Canada, Mr. Forsyth Smith, and there was nothing on which that gentleman was more emphatic than, "Send your best." If, said Mr. Smith, Australia hopes to hold her own, she must step well up the ladder in the classification of her Apples and cut out the third grade.

Why should not Australia step out, or, if we cannot do it with a step, jump! Jump for our life, or we will assuredly perish and be forgotten, relegated to the limbo of Lost Causes.

I trust, Mr. Editor, that I do not presume to absorb too much of your valuable space, but this matter is of so great importance that we must force the new grading regulations on this recalcitrant child.

Yours faithfully,

W. Robert Gray.

Albion Gardens, Kesbrook, S. Aust.

SOUTH AUSTRALIA.

Growers are busy with seasonable operations, spraying, picking, and marketing Apples and Pears.

Preparations will soon be made for pruning, commencing with stone fruits.

A Conference of Non-Irrigated Fruitgrowing Branches of the Central Agricultural Bureau was held towards the close of last year, when a resolution was carried requesting experiments in orchards and vineyards by growers in the Barossa district, under the supervision of officers of the Agricultural Department.

On this subject, Mr. G. Quinn, Chief Horticultural Instructor, submitted a report to the Director of Agriculture, stating that he understood growers desired local experiments to be conducted in conjunction with District Horticultural Instructors. Mr. Quinn continues:—"In the Paracombe district Mr. Leishman, in conjunction with the owners (Messrs. Hirst Bros.), is carrying out a series of

tests of the possible value of certain well-established practices, with a view to overcoming the non-bearing habit of a large plot of well-grown mature Rome Beauty Apple trees.

"In the Lights Pass district, Mr. J. B. Harris is conducting codlin moth trapping tests in conjunction with Messrs. Plush & Son. . . . I am opposed to increasing the number of State experimental orchards at the expense of those already in existence, but the District Horticultural officers are encouraged to induce growers to duplicate certain tests of manuring, spraying, etc., which permanent experiments being carried on in the State orchards have indicated to be the most effective under somewhat similar conditions of soil and climate."

Western Australia.

Heavy Export Season.

There is much activity as regards fruit shipments. The season is a particularly heavy one.

Owing to the extremely dry weather, fruit is not coming up to the desired size, thus taxing the ability of growers and all concerned to fill shipping engagements.

SCION AND ROOT STOCK.

The Director of the East Malling Research Station, Kent, England, stated recently that with regard to the comparative influence of particular varieties of scion upon any variety of root stock, it has been found that although such an influence does exist it appears to be quantitative rather than qualitative, and at any rate quite subsidiary to the much more potent reciprocal influence of the root stock upon the scion.

TWO MILLION U.S.A. FARMERS ARE CO-OPERATING.

Two million farmers are organised into 12,000 Associations in the United States for the purpose of marketing their products or buying their supplies, or doing both, on a co-operative basis. Last year they sold collectively farm products to the value of nearly £40,000,000.

These co-operatively minded farmers are scattered throughout the 48 States, however, they are numerous in Minnesota, Iowa, Wisconsin, Missouri, New York, and in the States along the Pacific Coast.

Citrus News and Notes.

Interstate Conference, May 7.

As the Victorian Department of Agriculture has notified its intention of strictly enforcing the regulations against immature Oranges being marketed, growers are preparing to make the necessary tests in order to conform to the regulations.

As the materials for making the tests may be difficult to procure locally, the V.C.C.A. has made arrangements with a firm of wholesale druggists to put up the whole outfit (measure tubes and liquids) in a handy form at a cost of 12/6 posted. The phenolphthalein and soda solution with the outfit will suffice for several tests, and new supplies of these liquids can be secured for a few shillings. The tubes will do for any number of tests. Orders for the outfit should be placed with the V.C.C.A., 360 Collins-street, without delay, to ensure that they shall be supplied before the season opens. A remittance of 12/6 should accompany each order.

Annual Conference.—Subjects for the Annual Conference, starting on May 7, have been forwarded by the Murrabit, Nanneella, Red Cliffs and Cobram Associations.

The Murrabit District Citrus Association recently placed the following resolution:—"That branches be circularised to have all business for the Conference agenda paper sent to the Central Office in ample time to have the agenda paper sent out for discussion by all branches at least two weeks before Conference, and, if necessary, a supplementary agenda be forwarded later." (District Associations are asked to comply with this resolution.)

NOTES IN BRIEF.

There is an Orange planting boom in Palestine just now.

England in 1918 hardly knew what a Grapefruit was, yet the imports from U.S.A. grew from 40,000 boxes in 1921, to 700,000 in 1927.

Cold storage and modern transportation have brought the countries of the world nearer together. Producers must now think in terms of world production and distribution.

Spain exports nearly 22,000,000 boxes of Oranges annually: 50 per cent. of this quantity goes to Britain.

TASMANIA.

Short Apple Shipments.

Shipments of fruit from Tasmania are much less than that arranged for.

The "Largs Bay" called for 50,000 cases, but only half this quantity was available.

R.M.S. Mongolia was short of 10,000 cases. These are typical of other short shipments which might be quoted.

The position is most disconcerting.

Unfortunately, the crop has been reduced by codlin moth attacks. Because of the smaller quantity of fruit the grubs are vigorously attacking such fruit as is available. Some districts, too, suffered from hailstorms. After sorting the fruit in their packing houses, growers are finding that they can obtain fewer packed cases of export quality than is usually the case. Growers are asking to be relieved of the space contracted for.

Efforts are being made to keep faith with the shipping companies, realising the importance of the ships coming to Tasmania.

State Fruit Advisory Board.

A meeting of the Executive of the State Fruit Advisory Board was held at Hobart on February 25. Present: Messrs. B. J. Pearsall, M.H.A. (Chairman), F. Peacock, J. P. Piggott, M.H.A., A. Davies, and P. H. Thomas (Secretary).

Wharf Representative.—Mr. T. Burnaby was appointed Fruitgrowers' Representative on Hobart Wharves for the 1929 export season.

Sydney and Brisbane Agents.—Mr. A. J. Cooper, President, and Mr. W.

Musgrove, of the Sydney Associated Selected Agents, together with J. W. Cooksley, of the Brisbane Associated Selected Agents, gave helpful marketing information, particularly with regard to Black Currants, and were accorded a vote of thanks.

A letter was received from the Secretary of the Associated Agents, Melbourne, outlining suggestions for the marketing of Tasmanian fruit in Victoria. It was resolved that the Secretary be advised that the principal points enumerated were endorsed by the Board, and were incorporated in the constitutions of the Brisbane and Sydney Committee.

Overseas Export Regulations.

Consideration was given to the reply received by Senator Ogden from the Minister for Markets, in regard to the proposed amendments and the inadequate representation of Tasmania upon the conference which framed these and recommended their adoption.

It was decided to invite Tasmanian Federal Members and Members of the State Government to confer with the Board, the matter being of vital importance to Tasmania.

Black Currants and Raspberries.—

The Secretary reported that copies of the signed agreements received from the different factories re prices for Black Currants and Raspberries, did not conform to the intention of the agreement. It was decided to prepare a statement for the press.

Prices in London for American Apples show an upward trend, stated Mr. Edwin Smith, U.S.A. Government Fruit Specialist, on January 23.

The Hamburg Apple market showed a marked improvement in demand.

CALIFORNIA FRUIT ASSOCIATION HAS NO DEBTS.

An Association which does not owe a cent to anyone is in an enviable position. Such is the present status of the Suisan Valley Fruitgrowers' Association, a local of the California Fruit Exchange, Sacramento. Its products include Peaches, Cherries, Pears, Plums, and Grapes. Carlot shipments were lighter in 1928 than in the previous year, as more fruit was sold to the canneries or dried. One hundred and thirty-six cars were shipped to eastern markets. Of these, 63 cars were sold in 36 private sale markets, and 73 cars in 12 auction markets. Gross sales totalled £43,257.

Sales of merchandise and spray came to £8,501. Net earnings from this source were £510, which was returned to members in the form of a 6 per cent. dividend on purchases. A refund from packing house operations amounted to £247, and a refund of £775 from the California Fruit Exchange brought total refunds for the year to £1,532.

During the past nine years the California Fruit Exchange has saved the members of the Suisan Valley Association the sum of £13,566 from its regular 7 per cent. commission. Of this sum, the Exchange has refunded £3,500, and the remainder is in revolving funds, and will be payable during the next five years.

Not only strike while the iron is hot, but make it hot by striking.—Oliver Cromwell.

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New South Wales

Cultural Notes for April Statistics

Prune Grading Federation Conferences

Growers in the whole of our Apple and Pear growing districts are now busy picking, packing, and marketing fruit, and very many, perhaps most, are seized with the importance of handling and packing it carefully and marketing it attractively. It is absolutely necessary that the grower, in his own interests, should pack his fruit unbruised and with the skin unbroken, otherwise loss will result (write Messrs. C. G. Savage and H. Broadfoot, in N.S.W. Agricultural Gazette). Rot organisms will get in their disastrous work, and the decomposition resulting from their activities will spread to a greater or less extent to other fruit in the case, even though the latter has been picked, packed, and handled carefully.

Fortunately, most of our Apple and Pear growers are fully aware of these important facts. For those who ignore them, unpleasant experience awaits. For the sake of the inexperienced let these elementary packing reminders be reiterated:—

Pick carefully, avoid abrasions and punctures, pack firmly, and handle gently. Pack so that there will be a slight bulge on top and bottom of the case. Stack the cases on their sides. Generally speaking, it is advisable to wrap all Apples of good quality whose diameter is 2½ inches or over. Wrapping makes tight packing easier. By acting as a buffer, the paper lessens compression of the fruit, whilst giving a tighter pack.

Preparing Land for Planting.

Preparation of the land for planting fruit trees should be painstaking, patient, and thorough. Ploughing must be to a sufficient depth, sufficiency depending upon the nature and depth of the soil and the nature of the subsoil. The soil should be thoroughly broken up and allowed to remain in the rough, so that, exposed to the beneficial influences of sun, rain, air, and frost, it may be sweetened and improved in its chemical content, and so that it may absorb and hold the winter rains. Later, as a result of the influences referred to, it will respond to the orchardist's efforts to induce a good tilth.

Planting.

In localities where frosts are unknown during autumn, and where

that season is mild, citrus trees may be planted during the month of April. Avoid injury to roots and drying of roots during the process of planting. It will be necessary to water the newly-planted trees in dry soil, thus helping them over the critical period of establishment in their new position. Loss of soil moisture is lessened by the beneficial process of mulching. Do not place undecomposed manure in contact with the roots.

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out England and Continent.

Manure, if used at the time of planting, should be thoroughly mixed with the soil. When planting refills, a large hole should be dug and filled with fresh soil.

Re-soiling.

This is a beneficial operation, especially to citrus trees, whether practised alone or in conjunction with applications of manure or fertilisers.

Liming.

If quicklime is used for this highly desirable and beneficial operation it should be distributed in heaps over the land and covered with soil. When it is properly slaked it should be evenly scattered over the surface and cultivated in. The covering should be shallow. Growers who think of applying lime should first obtain Farmers' Bulletin 115, "Lime on the Farm," price 7d., post free, from the N.S.W. Agricultural Department.

N.S.W. STATISTICS.

Orchards and Vineyards.

The area and production of various crops in N.S.W. are given in the returns just issued by the Government Statistician. Included are the following:—

The 7,456 acres of wine Grapes, 2,576 acres of table varieties, and 2,965 acres of drying varieties gave a total weight of 15,692 tons for wine, 4,250 tons of fresh fruit, and 33,415 cwt. of dried fruit, the yield of wine being 2,295,030 gallons.

An additional area of 1,883 acres of Grapes has yet to come into bearing.

The 58,202 acres of productive orchard averaged 89.7 bushels per acre, while there is an additional area of 16,195 acres of young trees. The produce from 7,725 acres of market gardens was sold for £618,957, or at the rate of £80/2/- per acre, while the returns from 609 acres of nurseries reached £141,876, or £232/19/- per acre.

PREMATURE BLOSSOMING.

False Spring in N.S.W.

Coming Crop Spoiled.

Portions of N.S.W. suffered from a long dry spell during the summer and early autumn. This was followed by heavy rains and humidity, causing deciduous fruit trees to come into bloom. Plum, Peach, Apple and Pear trees in the Cumberland County all bloomed, an amazing sight for autumn.

Trees that were well watered during the dry spell suffered no harm.

Citrus trees that have bloomed should set their second crop about Christmas time, but the fruit will be more subject to attack by the fruit fly.

PRUNE GRADING.

New Regulations in N.S.W.

New Prune grading regulations have been gazetted in N.S.W., and include the following:—

34. There shall be eight grades of dried Prunes, viz., 20-30, 30-40, 40-50, 50-60, 60-70, 70-80, 80-90, and small. The fruit in each of the grades shall be of a uniformly good dark color. They shall be of such a size that the number of fruit in one pound weight shall, in the case of small grade, be over 90, and, in the case of any other grade, be not less than the smaller number nor more than the larger number in the name of the particular grade. Provided that a total margin of not more than 5 per cent. by count shall be allowed in each grade of fruits from the grades immediately below and above such grade.

35. No person shall pack for sale or sell in any covering or package any dried Prunes unless they are of one of the grades mentioned in regulation 34. The dried Prunes contained in any covering or package shall be of one variety.

36. No person shall pack for sale or sell any dried Prunes in any covering or package on which is written or printed any mis-description of the fruit contained therein.

37. No person shall pack for sale or sell any dried Prunes in any covering or package unless it is legibly marked on the exterior in letters not less than $\frac{1}{4}$ in. in height, and with the following particulars, viz.: (1) the words "packed by," followed by the name and address, with name of State, of the person or firm, or the name and registered office of the corporation by whom or by which the fruit was packed, provided that the trade-mark registered under the Commonwealth Trade Marks Act may be substituted for name of person or firm, and, (II) the grade of the fruit, and (III) the word "Prunes," and the name of the variety.

ANNUAL DISTRICT CONFERENCES.

It has been arranged to hold the Annual District Conferences of the Fruitgrowers' Federation of N.S.W. as follows:—

Northern District Conference, at Armidale, Tuesday, April 30.

Metropolitan Conference, at Windsor, Saturday, May 4.

Southern Conference, at Cootamundra, Tuesday, May 7.

Irrigation Conference, at Yenda, Thursday, May 9.

Central Tablelands Conference, at Bathurst, Tuesday, May 14.

Central Coast Conference, at Gosford, Thursday, May 16.

The Conferences will be followed by the Annual General Conference in Sydney on June 12, 13, and 14.

In order to provide all districts with an opportunity to discuss matters submitted from other districts, efforts are being made by the Federation to forward a copy of the agenda for all the District Conferences to every affiliated organisation throughout the State in sufficient time to allow delegates to obtain the views of their members.

Representation at the Conference is on the basis of one delegate for each 500 acres of orchard (or part thereof) registered by the members of each affiliated organisation. Each District Conference will elect 10 delegates to represent the district at the Annual General Conference being held in Sydney in June.

The Secretary of the Federation will attend each of the District Conferences to advise delegates in regard to the activities of the Federation.

Fruit Buds and Pruning Practices

(By George P. Weldon.)

In a number of short articles the writer has attempted to set forth some of the things that are of importance in the pruning of orchard trees. While some of these things may have seemed self-evident there is sometimes need for the placing of emphasis on the simple things upon which more difficult and technical things may depend. For example, the kind of cut to make has been emphasised. In itself this might seem to be a very small matter, but when we stop to think of the bearing that the cut has on the nutrition of cer-

tain parts of the tree, we can appreciate the importance of knowing something about how it should be made.

The study of fruit buds leading to a knowledge of the manner in which a certain kind of tree bears its fruit is a very important matter in its relation to the pruning of the tree. There are striking differences to be found among the various kinds of fruit trees, and these differences must be recognised if the pruner is going to do his work intelligently and well.

There are some trees that produce spurs, and the development of such is important in connection with fruit production; there are others that do not have the spur-producing habit and their pruning may need to be done in an entirely different manner because of this fact. Among the spur-producing trees the Apple and Pear are good examples. Fruit on most varieties of these trees is produced almost entirely on spurs which terminate in a fruit bud. The encouragement of spur growth is therefore important, and likewise care should be exercised in pruning such trees that too large a number of the spurs are not removed with a consequent loss of fruit. The Quince, which is closely related to the Apple and Pear, all of them being pome fruits, has an entirely different fruit-producing habit. Instead of buds being formed during one season, to bloom and produce fruit the next, the Quince, like the Apple, develops growth when the warm spring days arrive, and certain short spurs that are produced terminate in blossoms which produce the fruit crop for the season. The Peach does not have the spur-producing habit to any extent, and all of its fruit is borne on growth of the previous season. It would be possible to remove from a Peach tree all of the fruit that might be produced during a season by the pruning away of the new growth of the tree. Sometimes the pruner takes advantage of this fruit-producing habit and removes part of the new growth in order to thin the crop. Apricots and Plums develop spurs, and also bear their fruit on new growth. In these cases spur-production should be encouraged, but is not as important as with the pome fruits.

It is impossible in a short article to go into detail regarding the pruning of the various kinds of fruits that are grown in California. This article is intended principally to arouse an interest in a more or less scientific phase of the pruning problem, that which has to do with the study of fruit bud formation.—Geo. P. Weldon, in "Pacific Rural Press."

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Pioneer Fruitgrower Passes

Death of Mr. James Lang, Harcourt.

A Noted Career.

In the passing of Mr. James Lang, previously of Harcourt, Australia loses a worthy citizen and the horticultural world one of its leading lights. The respected gentleman died at his home at Camberwell on March 26. Although seemingly in perfect health, despite his 83 years, he quietly passed away in his sleep.

Thus no one will ever know the late Mr. Lang other than the vigorous, upright man who ever strode briskly among his fellows, a courteous cultured gentleman.

* * *

The late Mr. Lang was one of the pioneer fruitgrowers of the State, and a very old resident of Harcourt district. Mr. Lang relinquished his interests in fruitgrowing very recently, and came to Melbourne to live in retirement. He was not only one of the oldest and most respected fruitgrowers in the State, but also the first to pioneer the export trade in Apples to England. As a member of the State Conference which met in 1898 he was largely responsible for the passing of the Vegetation Diseases Act, foreseeing the grave dangers confronting the industry if the various pests were allowed to go uncontrolled. After the land boom, when the Royal Horticultural Society relinquished the Burnley Gardens, Mr. Lang served on the Board of Management for many years.

As a member of the Pomological Committee of Australia, the late Mr. Lang was highly esteemed, as he was a noted authority on nomenclature. He also was a pioneer grower of Narcissi, and was actively instrumental in inaugurating the first Daffodil show in Melbourne. For a period of thirty years he acted as judge of these flowers at the shows of the Royal Horticultural Society. But in the matter of flower-growing he was also an expert grower of Sweet Peas, and was a member of the National Sweet Pea Society of Great Britain. The "James Lang" Shield for Sweet Peas is now being competed for in the Kyneton Horticultural Society.

Born in Scotland, Mr. Lang came to Australia as a youth and spent practically the whole of his lifetime in various branches of intensive horticulture. He was esteemed by all who met him, and played no unimportant part in the development of horticulture in Victoria. He leaves one son, Mr. J. H. Lang, of Harcourt, and two daughters, Mrs. Warren and Miss Lang. His wife predeceased him some fifteen years ago.

* * *

The late Mr. Lang has left an honored memory. He was one of the old school of pioneers, who carved out his way to success in these new lands. His memory will always be cherished by those who had the privilege of knowing him.

Victoria.

Batesford, Near Geelong.

Mr. E. Weitnauer, fruitgrower, Batesford, writes as follows:—

The principal fruit grown here are Apricots, Apples, Plums, Pears, Peaches (few), Cherries and Quinces.

Varieties — Apricots — Moorpark and Tilton.

Plums—Early Orlean, Angelina, Jefferson, Old Green Gage, Diamond, President, Grand Duke, Egg Plum, and Golden Drop.

Pears—Williams, Packham's, Vicar of Winkfield, B. Capiaumont, but in general, Pears are failing badly in this district.

Apples — Gravenstein, Jonathan, Rome, Red Rome, Delicious, Munro's, Renette de Canada, Stewarts, Pomme de Neige.

Apples will soon be the only fruit as most trees are failing, particularly Pears and Cherries.

Cherries are getting very scarce, trees are dying out, even young trees will not last for more than five years. Principal ones are Werder's Early, Florence, St. Marguerite and River's Early.

Peaches were badly attacked with aphids this season. The principal ones are Hale's Early, Brigg's, Zerbe No. 1., Pump's Seedling, Late Crawford.

The last two seasons Strawberries and Gooseberries have come to the fore, and some fine fruits have come to hand.

The Asparagus industry is growing, and many growers have planted fair plots, and finding it remunerative. This year seems to have suited it, and some beautiful sticks were sold in the local market.

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Who will give all information

For codlin moth control, most growers are using nicotine sulphate in their arsenate of lead, and are using spreader, and find it an advantage.

Can any grower tell me, through your columns, the proper time to plant out Cape Gooseberries? Is there any demand for these berries? And what is a fair price per pound? Should the bushes be tied to sticks?

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Harcourt.

Growers are now engaged in harvesting the Apple and Pear crop, which proves to be one of the lightest in the history of the district.

A limited quantity of Pears and Plums have been forwarded for ex-

port, there are no Apples available this season.

In the reduced Apple crop an increased toll is being taken by the codlin moth, even where spray and bandaging has been carefully and conscientiously carried out.

Codlin Moth Parasite.

In the spring time the writer obtained through the courtesy of Mr. Ranger, of the Committee of Direction in Queensland, a supply of the parasite for codlin moth, *Trichogramma minutum*. These were released in the orchard, but no definite result in the control of this pest was obtained.

As the biological control of pests is full of promise; the last recent example being the *Aphibrius Mali* for the woolly aphis; every endeavor should be made to fully try out any parasites that prey on our orchard pests.

As the *Trichogramma minutum* is also an enemy to the Tomato moth and the cabbage moth, there are possibilities here that should not be neglected.—Jas. H. Lang.

FRUIT SHOWS.

Somerville.

At the 33rd annual show of the Somerville Horticultural and Agricultural Association, there were some excellent exhibits of fruit, flowers, vegetables and specimens of home-craft. The fruit was of a very high standard, the case and tray exhibits being the outstanding features. Sir George Fairbairn, who opened the show, quoted from his experiences as Agent-General in urging exactness in growing and packing for export. He congratulated exhibitors on the magnificent show.

Diamond Creek.

The Hon. W. H. Chandler, M.L.C., Minister for Lands, opened the Diamond Creek Show on March 9, complimenting growers on their pluck in holding the show when the crop was only 7 per cent. of normal. The fruit shown was of choice quality and nicely displayed: the pyramids of fruit were attractive. In the vegetables there were excellent exhibits. Flowers added brightness. There was a large attendance.

Wandin.

Believing that a fruit show would not be sufficiently representative this season, that section was abandoned; nevertheless, a show was held, including the children's section and a choice display of flowers.

Bacchus Marsh.

Fruit, vegetables and flowers of very choice quality were displayed at the recent Bacchus Marsh Show, opened by Mr. Hjorth, M.L.A. In the fruit section, Messrs. James Cowan and A. Durham were most successful: the specimens of Jona-

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Correspondence Invited.

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thans, Delicious, Stayman's Winesap, Stewarts and London Pippin were exceptionally good. Croydon.

Despite the poor crop of fruit, a creditable show was held on March 22 and 23, being opened by Mr. Chandler, M.L.C. Other speakers included Messrs. Everard and Knox, M's.L.A., and Tyner, M.L.C.

The display of flowers was of a very high standard, and proved a most attractive feature.

There were sections for domestic art, etc., while the outside ring events were appreciated.

Red Hill.

The Hon. W. Tyner, M.L.C., opened the Red Hill Show in the presence of

a large audience, under ideal conditions. In this progressive district the fruit is of excellent quality. At the show Apples and Pears predominated. The prize for best two cases packed by State school children was won by B. Trewin. Pakenham.

Apples and Pears were the main fruits in evidence at the annual show of the Pakenham and District Horticultural Society, opened by Mr. Walter, M.L.A. The district, in common with others, suffered because of a poor season, following the abnormal crops of the previous season.

However, the show was a success and a credit to all concerned. There were ring events and other attractions.

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Fruit Trees Offered.—The Two Bays Nurseries and Orchard Co. Ltd., of Moorooduc, Vic., are offering well-grown trees for planting this season. The firm points out that each season's trees are raised on virgin soil. Full stocks are held of Apples, Pears, Prunes, Peaches, Apricots, Oranges, Lemons, etc. Further information is contained in their advertisement in this issue. Illustrated catalogues are available free on application to the above address.

Queensland Bananas.

Strong Protest in Victoria.

Quality of Queensland Bananas Improving.

The Melbourne City Council recently discussed the quality of Queensland Bananas delivered in Melbourne. The Markets Committee submitted to the full council the report of the Market Superintendent, Mr. G. B. Minns, commenting adversely on the quality of Queensland Bananas, and requesting that the attention of the Minister for Customs (Mr. Gullett), be directed to this matter.

The Chairman of the Markets Committee, Cr. Ferguson, said that when the import duty had been placed on foreign Bananas in 1921, Queensland growers had given the assurance that they would supply fruit of an equal quality to that of the imported Bananas. This was not being done.

The town clerk read a letter from the president of the Norfolk Island Planters, Mr. F. Pollard, urging that the duty be not removed. The Norfolk Island Banana growers were all Australian citizens: 50 per cent. of the growers were returned soldiers. Mr. Pollard urged that arrangements be made with the Federal Government and a shipping company to enable a steamer to call at Norfolk Island for consignments of Bananas.

Cr. Kane, in seconding the motion, stated that not 1 per cent. of the Bananas consumed in Australia were produced in Norfolk Island. All that the Council could do would be to direct attention to the fact that Melbourne residents were not obtaining Bananas of a sufficiently good quality.

Cr. Liston said that the question was of a political nature, and moved as an amendment that the recommendation be referred back to the

Committee for further consideration. Alderman Sir Stephen Morell seconded the motion. He said that since the complaints had been made a great improvement had been shown in the quality of the Queensland Bananas received in Melbourne.

The amendment was agreed to by 18 votes to 9.

Mr. Corser, M.H.R., of Queensland, has submitted to the Melbourne City Council the following telegram.

Cooksley & Co.

(W. P. COOKSLEY)

Reliable Fruit Agents

Over 30 Years Experience

TRY THEM!

Fruit Exchange, Brisbane
QUEENSLAND

Shipping No. 29

Reference: Commercial Banking
Co. of Sydney Ltd.

"Gympie District Fruitgrowers, representing 5,400 acres of Bananas, strongly protest against erroneous reports of Mr. Minns, of the Melbourne City Council, regarding quantity and quality of Queensland Bananas."

Mr. Corser further states that the Banana industry was of much importance to Australia, and every effort should be made to preserve it. He has sent certain information with the Minister for Trade and Customs, Mr. Gullett.

**Do not run any Financial Risk with your Fruit
but Consign it to**

Telegraphic Address:
"Apples, Brisbane."

H. V. GEEVES

Registered Shipping No. 6.

FRUIT EXCHANGE — BRISBANE

SELECTED AGENT FOR:

Victoria: Harcourt Fruitgrowers' Progress Assn. Ltd.
Harcourt Fruit Supply Co. Ltd.
Victorian Central Citrus Assn. Ltd.

Tasmania: State Fruit Advisory Board.
New South Wales: N.S.W. Central Citrus Assn. Ltd.
Batlow Packing House Co-op. Soc. Ltd.

AUSTRALIAN DRIED FRUITS ASSOCIATION.

The Australian Dried Fruits Association is a voluntary organisation of growers of dried fruits in the States of Victoria, South Australia, Western Australia and New South Wales—the four producing States of the Commonwealth—and the object for which this Association was formed, was to ensure equity amongst all growers for fruit sold in both home and export markets.

Branches of the Association are formed by the growers in the various producing areas. District Councils are formed by the branches in various centres, which are situated in Mildura and Nyah

(Victoria), Renmark (S.A.), and Yenda (N.S.W.).

A State Conference is held yearly, delegates to which are elected by the District Councils. At the State Conference, delegates are elected to the Federal Council Meeting, which also is held annually. The Federal Council elects the Board of Management, which body controls the activities of the Association between Council meetings.

The present members of the Board of Management are:—Messrs. H. D. Howie (Chairman), T. C. Rawlings, P. Malloch, D. C. Winterbottom, J. B. Murdoch.

The Secretary of the Association is Mr. W. N. Sumner, and the head office is situated at 450 Collins-street, Melbourne, C.1.

DRIED FRUITS INDUSTRY.**Higher Duty Sought on Imported Dates.**

THE TARIFF BOARD has received an application for an increased duty on imported Dates. The duty at present is 1d. per pound on all imported dates, and an increase of 3d. per pound on Dates with stones, and 4d. on Dates without stones, is asked for.

Mr. D. C. Winterbottom, a member of the Board of Management of the Australian Dried Fruits Association, said the total annual sale of dried fruits in Australia amounted to between 15,500 and 18,000 tons made up as follows:—Currants, 3,000 to 4,000 tons; Sultanas, 6,500 to 7,000 tons; Lexias, 2,000 to 2,500 tons; Dates 3,500 to 4,000 tons. Dates thus absorb 25 per cent. of the available markets.

The dried fruits industry has been greatly extended in the last four or five years, and the tonnage produced has varied from 35,000 to 55,000 tons a year. The crop this season will probably yield 60,000 tons, which is about five times the quantity required for Commonwealth markets. This means that 48,000 tons will have to be marketed overseas. These markets are being exploited by Californian "carry-over" fruit, which is being sold in large quantities at 20/- a cwt. c.i.f. in all the world's markets, thus making the position of the Australian industry very difficult.

Twelve months ago the world markets returned a grower about £35 per ton for Sultanas, but were now returning only £17. Continuing, Mr. Winterbottom said that said that Australian prices had been reduced £10 a ton, but sales were restricted in the worlds' markets owing to heavy competition from California. Australian growers were unable to further re-

duce the cost of production. If the imposition of 3d. per pound duty on dates increased the sale of Raisins and Sultanas by 2,000 tons in Australia, it would be justified by the assistance, it would give to the dried fruits industry.

Mr. Winterbottom stated that the cost of producing Lexias on a yield of 31 cwt. per acre was £32/4/3. The average loss from 1924 to 1928 was £6/14/3 a ton, or £134,821. The increase in duty would not raise the

Mr. Winterbottom: I would not say that. All classes use them.

If it is a question of price, and not of taste, would it not be the man on the low wage who would suffer?—Many of the growers are getting less than the basic wage.

Mr. James M. Balfour, chairman of the Victorian Dried Fruits Board, supporting the application, said: The landed cost of Dates, duty paid, in stone in Australia, is £35 a ton, less 2½ per cent., while the production cost of Lexias delivered by rail in Melbourne on a yield of 31 cwt. an acre, is £48. The estimated production this year is:—Sultanas, 42,000 tons; Lexias, 7,500 tons.

Mr. Alexander McKinnon, managing-director of Red Cliffs Co-operative Packing Co. Ltd., stated that Dates were prepared and packed in Mesopotamia in 1916 under filthy conditions.

Mr. Conaghy said the matter of sanitation would not affect the Board's decision. If he wished to pursue the matter further, he should place it before the Federal Minister for Health, Sir Neville Howse, V.C.

AUSTRALIAN DRIED FRUITS.**Need for Increased British Preference.**

The Chairman of the Victorian Dried Fruits Board (Mr. J. M. Balfour) recently commented on the Australian dried fruits export situation. The distributors of Californian dried fruits stated Mr. Balfour, claim that in 1927 the export of raisins equalled 29 per cent. of the production of that year, and that their exports for 1928 broke all previous records, and considerably exceeded the record for 1927. To do this, however, they paid the Californian grower about 25 per cent. of the Australian cost of production. They claimed further that smaller

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Account Sales Posted Daily

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"Fruit Exchange,"

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Victoria Markets**MELBOURNE**

Reference—Satisfied Growers in all States

price of dried fruits in Australia. Lexias would benefit most by an increase in the duty on Dates. Sultanas would also benefit. If an additional 2,000 tons of Raisins and Sultanas could be sold annually in Australia, it would benefit the industry to the extent of £25 a ton—the difference between the returns from the export and home markets.

In reply to a question by the chairman, Mr. Winterbottom stated that the public would have to pay an additional £38,000.

Mr. Guy: Do not the poorer classes use Dates because of their cheapness?

sizes of American raisins were sold in the United Kingdom in competition with the currants of Australia and Greece. To his mind this proved conclusively that the amount of British preference granted to Australia was insufficient to adequately protect us on the British market, although through the Australian preferential tariff British manufacturers received much more favored treatment in Australia.

"Under the protection of the Australian preferential tariff," continued Mr. Balfour, "Great Britain sends in more than £60,000,000 worth of goods a year. On this Australia rebates to Great Britain £8,000,000 in duty every year. Moreover, in 1926-27 £29,968,581 worth of these goods paid no duty at all, whereas if they had

£8,000,000 a year rebated in duty on British manufactures, and it must be remembered that the Commonwealth and States have given heavy subsidies on primary products. I hope

therefore that at the next Imperial Conference the question of British preference to Dominion products will be advanced still further to the advantage of Australian dried fruits."

Apricot Scab or Shot Hole.

Effective Control by Spraying in Autumn, Winter and Spring.

Scabby Fruit Reduced from 46 per cent to 6 per cent.

First Bordeaux Spray is Given in May.

Valuable Work by Mr. S. Fish, of the Department of Agriculture, Victoria.

SPRAYING to control fungoid and insect pests demands skilled attention in the four seasons of the year.

With regard to the experiments carried out by Mr. S. Fish, of the Victorian Department of Agriculture, to discover the best method for the control of Apricot Scab or Shot Hole, have been greatly appreciated by growers. Resolutions of appreciation have been carried at growers' meetings. This is a nice tribute to the work of the Department and to Mr. Fish himself, who is a capable and zealous officer, and one who should go far in his profession.

Experiments have been made by Mr. Fish to determine the value of applications of Bordeaux mixture at various periods.

Autumn spraying has been found advantageous—an application late in May, followed by a winter spray (mid-July); at the pink-bud stage (about August 15).

The Bordeaux mixture was made using exact proportions—12 lb. of bluestone was dissolved in 40 gallons of water, and 8 lb. of quicklime, free from "rock," was slaked slowly with water and brought up to 40 gallons. The two lots of 40 gallons of mixture were then run at the same time into the power pump. A Bordeaux colored sky-blue resulted. Casein spreader was made into a fine paste, and added to the spray mixture at the rate of 1 lb. to every 100 gallons of the spray. The weather conditions on every occasion of spraying were ideal, and the sprays had dried on the trees before any rain came.

Results were eminently satisfactory, reducing the percentage of

scabby fruit from 46.7 per cent. on unsprayed trees to 6.6 per cent.; this result being obtained in a season when

HAMBURG

(GERMANY).

Ph. Astheimer

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Fruit Brokers . .
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Foreign Apples a Speciality.

F. W. Vear

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WESTERN MARKET
MELBOURNE, VIC.

Highest Market Rates Assured
Prompt Settlements

been imported from other countries the duty would have been £3,756,686. In 1927-28 the value of preference granted by Britain to Australia—that is on dried fruits, sugar, and wine—was nearly £900,000. That appears small compared with the

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COVENT GARDEN
LONDON, W.C.

and at
Jamaica House,

9 & 10 Botolph Lane, London, E.C.
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Prompt Returns & Settlements
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LLOYD'S BANK LIMITED
Law Courts Branch, Strand,
London, W.C.

Shipping Nos.
431 and 432

conditions were favorable to the development of the disease.

As the first spray is put on towards the end of May we will publish further details next issue.

"To Choose the Best is Wisdom"

The "Lightning" Fruit Grader Co.

SPECIALIZES IN ALL CLASSES OF MACHINES FOR
CITRUS AND PACKING HOUSES

and concentrates solely on this class of manufacturing

YOUR INTEREST IS OURS

It will pay you to trade with a firm who have a reputation for Quality and Service.
Plans and specifications supplied for the equipment of Modern Packing Houses.

5 Hoddle Street, Collingwood

Cable and Telegram Address : "Lightning," Melbourne

Planting Fruit Trees.

Hints on Cross Fertilisation.

FRUITGROWERS are now making active preparations for planting fruit trees during late autumn and early winter.

The importance of early planting is now becoming recognised. A well-known South Australian fruitgrower and nurseryman (Mr. H. N. Wicks) states that although the tops of deciduous fruit trees appear to be dormant for three or four months during the winter, the roots do not have a dormant period of more than a few weeks. Trees have been noted to have a very visible growth of new roots when removed from the nursery bed early in June. Immediately these tender hair roots are exposed to the air they perish, and the tree loses that amount of vitality, and has to start afresh. It will thus be seen that if a tree is planted in warm, moist soil, say, at the end of May or early in June (providing, of course, that a good rain has taken place sufficient to thoroughly moisten the soil down to the subsoil), it will be well established in its root system by early spring, and extra growth and vigor will be the result.

Where late planting is unavoidable, fruit trees can be ordered early and placed in cold storage.

Preparation for Planting.

Previous to planting the soil should be thoroughly broken up as deeply

as possible. Subsoil ploughing is to be highly commended; a year's fallowing, although not essential, is very beneficial.

If the soil is well and deeply tilled, as it should be, it is not necessary to take out a larger hole for planting the tree than the size of the roots demand.

Cross Fertilisation.

It is now a well-established fact that the cropping qualities of certain varieties of fruit trees are greatly improved by cross pollination, and consequently it has become a matter of great importance to orchardists to plant varieties that bloom at the same time in close proximity to one another.

Not only do better crops prevail amongst orchards which are subjected to this treatment, but the number of windfalls is reduced to a minimum, as properly fertilised fruits do not fall to anything like the extent that do partially fertile ones.

The benefits of cross pollination are especially noticeable in Apples, Pears, and European Plums, and consequently the following list of varieties has been compiled, showing those which are in full bloom sufficiently close to each other to be of value to one another for fertilising purposes:—

Apples.

No. 1.	No. 2.
Gravenstein	Buncombe
Jonathan	Cleopatra
King David	Dumelows
Dunn's Favorite	Esopus Spitzenburg
Rokewood	Granny Smith
Tasma (Democrat)	Reinnette de Canada
Statesman	Williams' Favorite

No. 3.
Glengyle Red
London Pippin
Rome Beauty

The date of full blooming of the majority of varieties in list No. 2 of Apples is only a few days after those enumerated in list No. 1, therefore most of the varieties in these two lists have a coincident flowering period sufficient for fertilisation purposes.

Pears.

No. 1.	No. 2.
Brockworth Park	Beurre Diel
Harringtons Victoria	Glou Morceau
Howell	Gansell's Bergamot
Kieffer's Hybrid	Josephine de Malines
Packham's Triumph.	Uvedale's St. Germain
	Williams' Bon Chretien
	Winter Nelis

Plums.

The following lists of Plums are collected from information supplied by the Government Orchard, Blackwood, South Australia:—

No. 1.	No. 3.
Angelina Burdett	Giant
Fellemburg	Grand Duke
	Jefferson
	President
No. 2.	Prune D'Agen
Diamond	Robe D'Sargeant
Early New Orleans	Reine Claude
Jefferson	Bavay
President	Sugar Prune
	Splendour
	No. 5.
No. 4.	Early Rivers
Green Gage	Egg Plum
Pond's Seedling	Kirk
Prince Engelbert	Monfries' Golden Drop
Washington	Pacific Prune

-LEMONS-

We are the largest Buyers in Australasia

C. M. BROOKE & SONS
73 Whiteman St., South Melbourne, Vic.

Almonds.

No. 1.	Commercial
Brandise	Golden State
White Nonpareil	Imperial
Peerless	I.X.L.
No. 2.	Ne Plus Ultra
Californian	Strouts
Paper Shell	True Jordan

Although fairly good results have been obtained by grafting one limb

age, with good results, it has nothing to recommend it in setting out a young orchard. Alternate rows of varieties of the same flowering period have been proved to be the most efficient in the matter of pollination, but every fifth row will give good results.

To ensure consistent fruiting, it is not advisable to pollinise a block of one variety with only one pollinising variety, but, if possible, use several, as any one variety may fail to bloom, when, in such case, the whole block may suffer, whereas it would be very unusual for three or four varieties to all fail at once.

NEW PEACH.

Taylor's Anniversary Late Red.

The new dessert Peach, Taylor's Anniversary Late Red, which has created favorable attention, will not be available till the planting season of 1930. Mr. Taylor has had this Peach bearing for three seasons, and says that if anything the Peach has improved. The Peach has a beautiful

flavor, pleasing appearance, and a remarkably small stone. The sole selling rights are held by Swane Bros., Enterprise Nursery, Ermington, N.S.W.

The Neptune Oil Co. Ltd., Riverstreet, Richmond, E.I., manufacturers of spray materials, advise that

SWANN & Co.

Established 1822.

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FRUIT OF ALL DESCRIPTIONS

All Consignments for U.K. will have Personal Supervision and Attention

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Bankers:—Bank of England.

Australian Representative
Chas. E. Howship, 129 Queen-st.,
Melbourne, and Surrey Chambers,
Perth, W.A.

Victorian Agent: H. M. Wade &
Co., 471 Flinders Lane, Melb.

on to each tree needing pollination, and this method is often resorted to in orchards that are of bearing

T. STOTT & SONS

Fruit Merchants

Established 1882

A Trial Consignment solicited from Growers in all States.

Prompt Settlement.

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their branch offices in Brisbane and Adelaide are now as follows:—Brisbane: 133-135 Mary-street. Adelaide: Worando Buildings, Grenfell-street.

II

Orders Are Pouring in for FRUIT TREES



Goodman's Quality Trees are always popular, and for this Winter's planting heavy demands are being made. Your orders will receive our careful attention, but we advise early ordering to guarantee supplies.

Goodman's have been

Victoria's Leading Nurserymen for 40 Years

and our reputation stands behind every Tree sent out. Full stocks of all

Apples, Apricots, Plums, Peaches, Prunes, Japanese Plums
Pears, Nectarines, Quinces, Almonds, Cherries, Small Fruits
Bushes and Ornamental Trees, etc.

WRITE FOR COPY OF FREE CATALOGUE

C. J. GOODMAN, Picnic Point Nurseries
BAIRNSDALE, VIC.

(W. McF.)

AUSTRALIAN AND N.Z. DEPARTMENTS OF AGRICULTURE.

The following information sets forth the organisation of the fruit section of the Departments of Agriculture for the several States and of New Zealand.

In this issue the States of N.S.W. and Tasmania are included. The others will follow in later issues.

NEW SOUTH WALES.

Minister for Agriculture—Hon. H. V. C. Thorby, M.L.A.

Under Secretary for Agriculture—G. D. Ross.

Director of Fruit Culture—C. G. Savage, H.D.A.

Biologist—Dr. R. J. Noble, B.Sc.Agr., M.Sc., Ph.D.



Mr. C. G. Savage,
H.D.A., Director of
Fruit Culture, N.S.W.

Entomologist—W. B. Gurney, B.Sc.

Chief Chemist—A. A. Ramsey, F.C.S., F.A.I.C.
Educational Staff.

Chief Fruit Instructor—W. Le Gay Brereton, H.D.A.

Special Fruit Instructor (Pome)—H. Broadfoot.

Special Fruit Instructor (Citrus)—R. J. Benton.

Inspectorial Staff (Sydney).

Officer-in-Charge and Chief Instructor—E. D. Butler.

Senior Fruit Inspector—O. Brooks.

Eight Fruit Inspectors.

Inspectorial Staff (Country).

Five Bunchy Top Inspectors (Bananas).

Twenty-three Fruit Inspectors.

Senior Fruit Instructor—G. W. Beverley, Griffith.

Fruit Instructors—H. W. Eastwood, H.D.A., Byron Bay; W. W. Cooke, Goulburn; A. T. Hunter, Hornsby; W. McCutcheon, H.D.A., Curlwaa.

Orchardist, Hawkesbury Agricultural College—J. M. Arthur.

Assistant Orchardist, Hawkesbury Agricultural College—R. G. S. Kebby.

Orchardist, Bathurst Experimental Farm—J. A. Ballantyne.

Assistant Orchardist, Bathurst Experimental Farm—J. McGrath.

Orchardist, Wagga Experimental Farm—J. C. Allison.

Orchardist, Glen Innes Experimental Farm—W. M. Walker.

Assistant Orchardist, Cowra Experimental Farm—W. A. Mills.

Fertilizer

Nitrate of Soda

It is not whether you can afford to fertilise, but how much you will lose by not doing so.

The man who does, obtains top prices and increases his yield.

Why?

Because Nitrogen is the ingredient which exerts a predominant influence on formation of the foliage and all new growth, and NITRATE OF SODA has Nitrogen readily and totally available for plant food without further change and does not exhaust the lime contents of soil.

Nitrate of Soda

- (1) Is entirely soluble, clean to handle, and has no objectionable smell.
- (2) Owing to its solubility and ready availability may be applied at any time that Nitrogen is considered to be required.
- (3) It may be applied broadcast on the surface of the soil or it may be dissolved in water and used as a liquid manure.
- (4) It penetrates through the soil particles as soon as dissolved, and encourages the downward trend of roots.
- (5) It does not make the soil acid or sour.

Nitrate of Soda

Increasing Yield of Citrus Trees

Mr. F. W. PRATT, "Dane Hill Orchard," Pennant Hills West, N.S.W., writes, November, 1927:—

"Of all fertilisers I find that Citrus responds more quickly—almost immediately to NITRATE OF SODA, and in my opinion it stands easily first—all this season my consignments have sold speedily at TOP market rates."

Nitrate of Soda

is an important factor in fruit growing. Orchards which receive a reasonable amount of care and attention, including a judicious and liberal use of suitable fertilisers are invariably very profitable investments.

In the Agricultural Gazette of N.S.W., July 1st, 1927—Mr. W. B. Stokes, Orchard Inspector, and Mr. R. J. Benton, Fruit Inspector, speak very highly of NITRATE OF SODA.

Fruit Trees are living organisms, deriving nourishment from air, water, soil, and controlled by light and heat and considerably helped by nature's own fertiliser—NITRATE OF SODA.

VEGETABLE GROWERS:—NITRATE OF SODA is beneficial to all vegetable crops when used in judicious quantities—Cabbages, Cauliflowers, Lettuces, Asparagus, Celery, Spinach, Onions, etc., etc., specially respond to it. It should be used, however, with caution on Leguminous Crops—Peas, Beans, etc.—only small quantities being applied if any is deemed advantageous to use.

SMALL APPLICATIONS at intervals are always more effective than one large dose.

DO NOT SPRINKLE ON FOLIAGE.—Soak your empty bags, and use the water.

Any difficulty in obtaining supplies or information required, apply—

Nitrate of Soda

G.P.O. BOX, 2037 L SYDNEY

Viticultural Branch.

Viticultural Expert—H. C. Manuel, R.D.A.
Superintendent, Viticultural Station, Narara—
H. G. White.

Director Botanic Gardens—Dr. G. P. Darnell-Smith, B.Sc.

Curator, Botanic Gardens—E. N. Ward.

Director of Plant Breeding—H. Wenholz, B.Sc.

Richmond, Hawkesbury Agricultural College (50 acres)—Stone, pome and citrus trees; Grape vines and vegetables.

Bathurst (60 acres)—Mainly stone and pome fruits.

Wagga (60 acres)—Mainly Prunes, with smaller areas of Olives, Pears and vines.

Glen Innes (20 acres)—Mainly Apples and Pears. A few stone fruits.

Cowra (9 acres)—Mixed orchard.

Grafton (5 acres)—Citrus and tropical fruits.

Wollongbar (5 acres)—Macadamia Ternifolia nut, citrus and tropical fruits.

Yanco (80 acres)—Citrus, stone and pome fruits and vines.

Yanco Irrigation Farm is now under the Child Welfare Department, the experimental work in the orchard is conducted under the direction of the Fruit Branch.

Viticultural Nursery, Narara (70 acres)—Propagation of resistant vines; experiments with Pecan nuts, Passion vines, and Mandarins. The

area is being extended to carry out the nursery work in connection with the investigational work of the Fruit and Plant Breeding Branches.

Viticultural Nursery, Griffith—Vine experiments; raising of cuttings of resistant stocks.

Fruit trees introduced from overseas countries are held in quarantine at the Botanic Gardens, Sydney, where special facilities are available for growing plants in insect proof glasshouses.

This State does not own a commercial fumigation plant, but fumigation experiments are carried out by the Entomological and Fruit Branches with a small departmental plant, and also with the assistance of contractors.

TASMANIA.**Division of Horticulture.**

Chief Horticulturist—P. H. Thomas.

Technical Officers—Mr. H. A. Turner, Horticulturist, N. Tas.; Mr. T. D. Raphael, B.A., Horticulturist, S. Tas.

Duties.—Technical advice and assistance to orchardists. Conduct of: experimental work, demonstration plots, lectures. Co-ordination with respective district agricultural organisers in different State Divisions.

Packing Instruction.—Mr. A. S. Brennan, two assistants.

The "HARVEY-DELANY" GRADER

ELIMINATES BRUISING

**FRUIT comes in contact with
soft rubber only.
PERFECT GRADING**

This Grader is built for **EFFICIENCY** and **DURABILITY** at a **PRICE** to suit every grower.

The Labour Saving
alone will more than
Pay for it the First
Season.

There is nothing to get out of order, and is so simple that a child can operate it.

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ORCHARD IMPLEMENT MANUFACTURER
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Agents all States



"Harvey-Delany" Fruit Grader—Graders made in all Sizes.

Duties—Conduct of packing classes, and general instruction in packing and grading of fruit. Shed: Inspection of consignments being packed for export.



Mr. P. H. Thomas,
Chief Horticulturist,
Department of Agriculture,
Hobart, Tas.

Port Inspection (Fruit, Plants, etc.)—S. H. Grueber; seven permanent assistants; temporaries appointed as occasion demands.

Duties—Inspection under Apples and Pears Standardisation Act (interstate trade). Inspection of plants, fruits, etc., under Quarantine Regulations.

Note.—The inspection of orchards is performed by the Councils and Fruit Boards appointed in the different municipalities of the State.

State Fruit Advisory Board.

Secretary—P. H. Thomas.

Producers' Representatives—B. J. Pearsall, M.H.A. (Chairman), Neil Campbell, M.H.A., W. H. Calvert, M.L.C., Arthur Davies, T. J. Eddington, J. H. Astell, O. J. Morrisby, G. McGowan.

Canners' Representative—F. Peacock.

Exporters' Representative—J. P. Piggott, M.H.A.

Dried Fruits Representative—V. Skinner.

U.S.A. FRUIT IMPORTS.

Some Startling Figures.

Despite the large quantities of dried fruits produced in California, over five million dollars' worth of dried fruits was imported by U.S.A. during last year. Here are the figures:—Figs, 2,014,000 dollars; Dates, 1,913,000 dollars; Currants,

941,000 dollars; Raisins and other dried Grapes, 261,000 dollars.

America also imported Bananas valued at 35,591,000 dollars; Pine-apples valued at 1,398,000 dollars; Lemons valued at 2,928,000 dollars; Cherries valued at 1,948,000 dollars.

As a result of the short crop in California, U.S.A. imported twice as many Lemons in 1927-28 as in 1926-27, or almost 96,804,000 pounds. The

quantity of Bananas received from overseas countries was 12 per cent. greater in 1927-28 than a year ago, amounting to 64,029,000 bunches, as against 57,102,000 bunches last season. Central America and the West Indies are principal sources of supply.

Imports of Grape-fruit fell off decidedly, as did imports of Currants, Figs, Dates and Raisins. More Peanuts were imported in 1927-28 than at any time since 1925, unshelled nuts showing a gain of 9,088,000 pounds, and shelled an increase of 7,932,000 pounds over a year ago. About 90 per cent. of these imports come from China.

Imports of Almonds and Filberts also were larger than in 1926-27, but Walnuts Pecans, Brazil nuts and Chestnuts all showed marked declines.

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EXAMINATION "BULLS."

The following "bulls" were discovered in the examination papers of some particularly bright scholars at recent exams:—

A grass widow is the wife of a dead vegetarian.

Psyche was a black boxer who fought Carpentier.

One of the chief uses of water is to save people from drowning in.

No one has yet succeeded in identifying the dark lady of the sonnets.

Mephistopheles was a Greek comic poet.

Algebraical symbols are used when you don't know what you are talking about.

A deacon is the lowest kind of Christian.

Geometry teaches us how to bi-sex angels.

The press to-day is the mouth-organ of the people.

SOIL CULTIVATION.

Remarkable New Invention..

Approved by Science and in Commercial Practise.

The "Simar" Rototiller.

For many years science has been intensively co-operating with agriculture in all its phases. Some remarkable improvements have been secured, but none have been more outstanding than in the method of soil tillage and the necessary machinery.

Sir John Russell, the noted soil expert, who recently visited Australia, said that in addition to improving the texture of the soil, to reduce friction, important new implements were being devised—particularly in regard to rotary motion. Instead of pulling implements by tractors or horses, the rotary motion should be applied direct to the cultivating machine.

"The rotary cultivator in use at the Rothamsted Experiment Station, England," continued Sir John, "has given promising results. The implement, instead of being dragged along, simply works itself along. Its tines or hooks tear a way through the soil."

It is on this principle that the "Simar" Rototiller has been devised.

This implement combines in the one operation ridging, ploughing, scarifying, harrowing, etc.; in fact, ground turned over once is in a fit condition for immediate sowing or planting. In breaking up new ground, however, it is found that by going over a second time with the Simar Rototiller, a deeper tilth can be secured.

The machines are made in 5 and 10 horse power size. For cultivation in nurseries, orchards, vineyards, market gardens, and for general soil cultivation purposes, the Rototiller is unique. The principle was perfected after years of research, and now the machine has been designed to do cultivation far more effectively, and at a far less cost than was ever contemplated a few years ago.

The "Simar" Rototillers have thus revolutionised soil tillage by replacing the various processes hitherto employed, by one single operation. In comparison with previously adopted methods, the chief point of difference lies in the fact that instead of dragging a rigid tool, the "Simar" Rototiller is helped forward by its rotary power driven elastic steel tines. In this manner, the engine power is applied directly to soil tillage,

instead of being almost completely wasted by a drag tool.

The depth is variable from 2 to 10 inches, this being regulated at will by a depth shoe which is fixed underneath the gear box. The depth setting can be readily changed in a few seconds. The standard width is 20 inches for the "Simar 5 h.p." and 36 inches for the 10 h.p. This can be reduced if desired.

As the engine starts, all that is required is that the operator shall guide the machine. When working between rows of trees or vines, or in cultivating virgin soil, the handles can be moved from side to side as required, allowing the operator to keep clear of branches of established trees, or if cultivating new ground, to walk at the side of the machine without treading in the soil immediately cultivated.

Various types of tines are obtainable for deep or shallow tillage; anti-choke tines are obtainable for dealing with abnormally weedy ground, or turning in a green crop; also scuffling tines are available for broad or shallow scarifying. Again, it is possible to ridge up the soil. The ridge attachment is extremely useful for leaving soil in ridges during the winter, and is also of special service to potato growers and others.

PORT OF MANCHESTER

Extracts from Official Market Reports

(Published weekly by British Minister of Agriculture) willingly forwarded to Growers, Exporters and others on application to address below. These records

PROVE Prices realised for Imported Fruit AT MANCHESTER Challenge Comparison

With results obtainable at any other market, as the following examples indicate:—

	Hull.		Liverpool.		London.		Manchester.	
	1st quality.	2nd quality.	1st quality.	2nd quality.	1st quality.	2nd quality.	1st quality.	2nd quality.
18/1/29. Oregon Newtowns (case) ..	15/6	13/6	15/-	13/-	13/6	11/-	17/-	14/-
American Greenings (barrel) ..	35/-	30/-	31/-	26/-	35/-	30/-	36/-	30/-
25/1/29. Oregon Newtowns (case) ..	15/6	13/6	13/6	11/6	14/-	11/-	16/-	14/-
" York Imperials (barrel) ..	36/-	29/-	28/-	22/-	30/-	24/-	36/-	34/-
" Baldwins (barrel) ..	30/-	26/-	25/6	23/6	30/-	20/-	32/-	28/-
" Russets (barrel) ..	34/-	28/-	31/6	28/-	30/-	25/-	35/-	33/-

GROWERS AND EXPORTERS! WHY NOT SHIP DIRECT to the best market as your competitors do?

For information as to charges, selling brokers and importers, etc., apply to:—

Cables & Telegrams—

"Portoman," Sydney.

CAPTAIN W. J. WADE,
8 Bridge St.,
SYDNEY, N.S.W.

The work of soil tillage and ridging is one single operation.

The "Simar" Rototiller is mechanically perfect, it being built for hard and constant service. This machine has only recently been introduced into Australia, where it has met with a fine reception. Users are enthusiastic, thus confirming the testimony of satisfied users in other parts of the world.

The "Simar" Rototiller has proved itself to be scientifically accurate, mechanically perfect, and a wonderful asset in practical use. It supplies a long felt want in Australia, and will come as a boon to those who are seeking to do work more effectively and at the same time reduce the cost of production.

The Victorian agents for this machine, are the Ormond Plant Farm Pty. Ltd., Ormond, S.E.9, near Melbourne, Victoria.

NEW ZEALAND FRUIT-EXPORT GUARANTEE.

The New Zealand Minister of Agriculture has decided to renew, for the 1929 export season, the guarantee on the export of fresh fruit from New Zealand. The guarantee is to be on the same basis as during the past season—11/- per case gross on extra fancy and fancy Apples and Pears, and 7/- on lesser but good-grade Apples.

The New Zealand Fruit Control Board has decided to make two important alterations in regard to this season's export trade, by which it is hoped to effect: (1) better handling and quicker identification of boxes when sorting out; and (2) enlarging the scope of growers' selection of brokers. The Board has grouped brokers (in London, Hull, Liverpool, Glasgow, etc.), who have been appointed as selling agents in their

respective ports. The Board will allocate a shipping mark to be used by each exporter for all shipments to Europe next season. Fruit will be sold in any centre where the Board employs more than one agent, the grower indicating which agent he prefers.

PAPAIN FROM PAPAWS.

The manufacture of Papain from Papaws is an industry that might with profit be taken up by Queensland growers. Papain is used for medicinal purposes fairly extensively. It has powerful protein digestive properties and is recommended by physicians in cases of chronic indigestion. Papain is sold in U.S.A. at 12/- per pound, often it is at a higher price. England imports from Ceylon 12 to 15 tons annually, and would take considerably more, if it was available. The price in England is much the same as in America.

A Papaw tree will grow about 30 fruit, which will yield one pound of juice, and the yield of papain will be about 16 to 18 per cent. of the weight of the juice. The collecting of the juice or latex, and the subsequent preparation of the powder, are simple. Incisions one-eighth of an inch deep are made on the skin by means of non-metallic knives, and the juice is collected in porcelain or wood basins. The fruit is "milked" when about two-thirds ripe. The latter is dried and reduced to powder. An ordinary coffee-mill will do the work of grinding papain to powder. When ground, the powder is placed in air-tight bottles, ready for market.

Fruit that has been "milked," ripens quickly and loses little of its flavor. Its injured appearance, however, lowers its market value as fresh fruit.

THE HOME-RULE PARTY.

A young woman political worker was helping to take a pre-election poll of the voters.

"May I see the gentleman of the house?" she asked of a large woman who opened the door at one residence.

"No, you can't," answered the woman decisively.

"But I want to know the party he belongs to," pleaded the girl.

"Well, take a good look at me," she said sternly. "I'm the party."

Fruit and Ornamental Trees

Grown for Sale by

C. A. Nobelius & Sons Pty. Ltd.

Gembrook Nurseries,
EMERALD, VICTORIA

Telephone: Box Hill 154

Catalogue on Application

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Bank House - Bank Place - Melbourne

PATENTS

GEORGE A. U'REN
PATENT ATTORNEY

"499 LITTLE COLLINS ST.
HENTY HOUSE. MELBOURNE.

Fighting Insect Pests in the Orchard.

Woolly Aphis.

Rutherglen Bug.

See "The Fruit World," February 1, 1929.

Codlin Moth.

Keep a sharp lookout for larvae under bark and bandages. Destroy all fallen fruit.

For further notes, see "The Fruit World," December 1, 1928, p. 492.

Red, Olive, San Jose, and Other Scale Insects.

The young scales are now moving. Spraying should be done at once with light oils.

Light-brown Apple Moth.

One of the commonest pests of fruit trees, it is exceptionally widespread this season. The caterpillars, when fully grown, are about 1 inch in length, green in color. They have a habit of dropping to the ground by a silken thread and hiding in the crevices when disturbed. The moth is yellowish brown. The eggs are deposited on the leaves, fruit, etc., and the eggs hatch in a few days, the caterpillars immediately boring into the flower buds or making holes in the Apples.

Spray with arsenate of lead.

Painted Apple Moth.

During the warm weather the caterpillars of this moth have become numerous. They eat the leaves and fruit spurs of Apple and other fruit trees.

Spray same as for light-brown Apple moth.

Red Spider and Bryobia Mite.

The hot weather is responsible for the spread of the red spider and bryobia mite. Some Apple trees have all their leaves turning a greyish color. If the underside of the leaves are examined, the mites (red spiders) will be observed. Thoroughly spray underside of leaves with tobacco sprays. In winter use oil or lime-sulphur sprays. Burn all fallen leaves.

FIVE-FOLD MOTOR SHIP INCREASE.

Particulars are published in this month's "Motor Ship" concerning the tonnage of motor vessels and steamers launched each year throughout the world since 1923. In that year, the motor vessels totalled 213,000 tons gross, and represented 13.2 per cent. of the total tonnage of steamers and motor ships. In 1928 the oil-engine tonnage had risen to 1,168,000, representing 43.5 per cent. of the total. During the last quarter of 1928 the tonnage of motor ships launched exceeded that of steamers. Last month, orders were placed for 27 motor ships, but only six of them in England.

Pest Control.—A useful booklet has been issued by Messrs. Lane's Ltd., Abercrombie and Levey streets, Sydney, N.S.W., which contains information in regard to methods for controlling pests which attack citrus and deciduous fruit trees, vegetables and flowers.

EDGEELL SPRAY PISTOL.

Modern and up-to-date appliances are recognised as essential in every industry. At the same time, many people do not realise how much they are losing by holding to old methods and appliances.

The Edgell Spray Pistol is extensively used in districts where keen competition makes it necessary to cut out waste. By using the Edgell pistol, one cwt. of arsenate of lead is saved during each week's spraying, and, more important still, one man can do as much spraying as two men under other methods.

The Edgell pistol is sold by T. W. Sands, of 372 Lonsdale-street, Melbourne, C.I. Home lighting is also specialised in by Mr. Sands, who has the agency for the celebrated Knight Light Plants, Ironclad Incandescent 100 candle-power lamps, and storm-proof 300 candle-power lanterns for outside use, and for the packing shed.

Old lamps are also converted to the Titus, 150 c.p. lamp, which is guaranteed not to blacken the mantle. Allowance is also made on old lamps in part payment for the new incandescent lamps.

AGENTS WANTED

To Influence Consignments of Apples by
Reliable Firm

Write, Stating Terms, Etc., to—

HARTSTOKE, FRUITERS

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Cables: "Hartstoke," Brentford, Middlesex."

Reduction in Price of the NEW SYNTHETIC FERTILISERS Urea Diammonphos

46 per cent. Nitrogen as Urea.

20.6 per cent. Nitrogen as Ammonia.
52.5 per cent. Sol. Phosphoric Acid.

NITROGEN FOR FRUIT TREES is best applied in either of these forms, because:—

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| (1) They leave no useless matter in the soil. | (3) They are immediately available. |
| (2) They save cartage, handling, and distribution costs. | (4) Their effects last. |

IDEAL for swelling and coloring Fruit, and for Autumn application to CITRUS Trees.

Consult your Local Agent, or Write to Us for New Prices and Particulars.

DYES & CHEMICALS [Aust.] LTD.

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AUSTRALIAN FRUIT SALADS AND HONEY APPRECIATED.

The "Fruit, Flower and Vegetable Journal" of London, in its report of the Imperial Fruit Show held at Manchester recently, commented favorably on Australian products. The following is an extract.

"Owing to its being the off-season for Australian Apples and Pears, and the home demand leaving no surplus of citrus fruits for export, the Commonwealth was represented by an attractive display of canned and dried fruits, among which we noticed novelties which retail fruiterers might well bestow attention upon. Among these was 'Rosella' fruit salad and Passion Fruit essence for flavoring fruit salads. We were informed that many leading hotels have taken up this lat-

ter line as it imparts a unique and distinctive flavor to fruit salads. Australian honey is another line which many of our readers would doubtless find profitable to handle, particularly now that the public are keen on buying Imperially. Apart from patriotic motives, Australian honey is a business proposition, for it is attractively put up, is economical in price, and is of standardised quality. The honey comes over from various parts of the Island Continent, and is refined at one refinery at Mitcham, hence it is reliable in quality."

During one week in October, 1,030,000 boxes of U.S.A. and Canadian Apples were shipped to Europe (mostly United Kingdom). This was double the shipment for the corresponding week in 1927.

IT ALL DEPENDS. LADY ASTOR ALWAYS AHEAD.

Viscountess Astor always gets back at people. I heard her making an election speech in Plymouth once:

"Don't you wish you were a man?" a young fellow yelled.

"Don't you?" said she, and went right on with her argument.

"The young fellow thought a while. Finally he thought up something good. O, very good.

"Hey," he yelled again, 'don't you think mothers ought to stay home with their children?'

"I think," said Lady Astor, 'that children ought to stay home with their mothers,' and she went right on with her argument again."—"London Times."

Grubs and Eggs in Dried Fruit

are the terror of the fruitgrower, the grocer and the consumer. All dried fruits, nuts, etc., coming into Australia should be sterilised to kill all the grubs and eggs present. As all insect life and eggs

Can be Completely Eradicated

by the Hydro Vacuum process, Australian Dried Fruit could be so treated, and sent out in sealed containers to prevent re-infection. With such delightful, clean fruit, public confidence would be gained, resulting in mutual satisfaction and bigger trade. The old-time fumigating system has been rendered obsolete

By the Sterilizing Process

perfected in Victoria and patented through the Commonwealth. Strict tests under Government supervision prove that this process is absolutely satisfactory in the destruction of all insect life and eggs in dried fruits, nuts, grain, borers in timber, eelworm and bulbmite in bulbs. This effective system

Of the Hydro Vacuum Fumigation Co. Ltd.

is in operation at the Company's works, Ingles-street, Port Melbourne. The penetration of the lethal gases is complete, without opening cases or cartons. Further, the goods are in no way harmed. Full information is contained in a descriptive booklet obtainable free on request. This contains report of demonstration on September 4, before Federal and State Government officials.—Write for your copy now. The Hydro Vacuum Fumigation Co. Ltd., officially registered as a Quarantine Station by the Plant Quarantine Department. Works: Ingles-street, Port Melbourne. Office: Temple Court, Collins Street, Melbourne, C.I. Phone: Central 2670.

LIME for the ORCHARD

UNBURNT SCREENED
containing as per analysis
83.03 CALCIUM CARBONATE.
Price: 20/- per ton on Rail
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Send Own Bags Direct to Works
for Filling.



Registered Trade Mark

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containing as per analysis
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Price: 30/- per ton on rail
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Also BUILDERS' LIME, ALL BRANDS CEMENT, and BUILDERS' HARDWARE.

Further Particulars from Proprietors,

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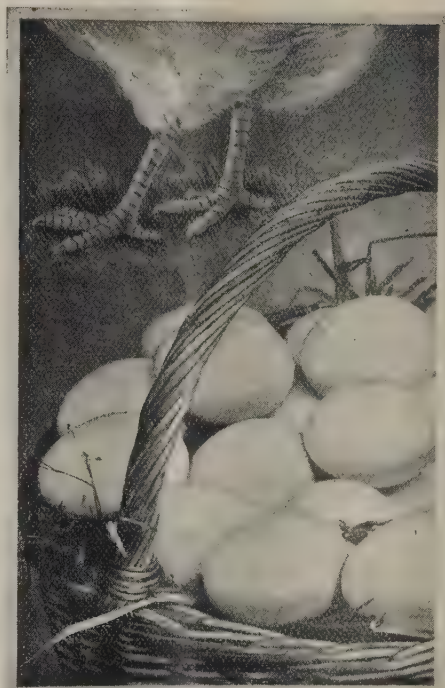
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New Laid Eggs

becoming scarcer
and higher in price



It has always been so. First comes the moulting, then the winter, and, Hey Presto, egg prices are soaring. Why have any need to worry over the high prices other people are paying? Why twinge when placing your weekly order with the grocer? Have your own fowls supplying you with new-laid eggs by feeding with "Karswood" (which contains dried and ground insects). Think what it means! No more eggs to be bought. No more good food to be turned into fat instead of eggs. Read the testimonials below and note the difference that "Karswood" made.

Fow's laying well.

"I have been using your Karswood Poultry Spice for a period of twelve months with very good results. A few months ago I discontinued using the Karswood, and I noticed a big falling off in the eggs, so I bought a supply of Karswood again, and they are laying well again. I will recommend it to all my friends."

(Sgd.) J. A.

Original letter on file for inspection.

Much better results.

"I have used Karswood Poultry Spice for a great number of years, and I have always had splendid results from it. I find it pays to use it," both for growing stock and matured birds. I have tested it out in many different ways, and in support of this I can tell you that from every experiment Karswood has always given much better results than any other competitive

**KARSWOOD
POULTRY SPICE**

1 M.29

Increases Egg-production but does not force or injure Poultry

article. I have averaged forty-three eggs from fifty layers for several months now. Karswood will not only prove a prolific mixture for pure breds, but will also do well with poorly bred fowls. I will advise all poultry keepers to use Karswood Poultry Spice."

(Sgd.) G. E. PEARSON,
Armida, N.S.W.

Overwhelming evidence.

"I have been a constant user of Karswood Poultry Spice for the last two and a half years. Without a doubt it has given me wonderful and overwhelming evidence of its splendid qualities. If this letter is of any value to you, you are at liberty to use it at your own discretion."

(Sgd.) H. SHUTTLEWORTH,
39 Bayview Street, Tennyson.

Note the Economy.

- 1/- packet supplies 20 hens for 16 days.
- 2/- packet supplies 20 hens for 32 days.
- 13/- (7 lb. tin) supplies 140 hens for 32 days.

Supplies.

Karswood Poultry Spice is obtainable from all wholesalers and stores at the following standard retail prices:—

- ½-lb. packet, price, 1/-; 1-lb. packet, price, 2/-; 7-lb. tin, price, 13/-; 14-lb. tin, price, 25/-; 28-lb. tin, price, 48/-.



Poultry Notes.

To improve your stock, introduce cockerels from some known and reliable strain.

Lime spread over the runs and a solution of lime wash and soapy water sprayed over the walls will keep poultry pens clean.

Cull out unprofitable birds from the flocks.

Signs of a good laying hen—short lean head, shallow skull, bright round eye, and long broad back. A good layer is close-feathered and a heavy feeder.

Black Orpingtons are recommended by a South Australian poultryman. These birds are stated to be hardy, great foragers, and do as well when confined as when run at large. They come in to lay at five to six months of age, if properly fed. We can keep breeding from the same pen for years if eggs are set from different hens.

Good feeding is recommended, using bran and pollard. Twice a week add crushed charcoal to the morning mash; midday throw in half a handful of wheat per hen, and at night another feed of wheat.

A tablespoonful of sulphur added to a pound of mash will be found beneficial to the birds, especially while moulting. Separated and skim milk can both be used with advantage for fowls in their mash, also for drinking purposes.

Roup in Poultry.

Roup is contagious and causes much loss to poultry-keepers.

Treatment.—Examine birds carefully, and for any badly affected the axe is the best remedy.

All birds slightly affected should be quarantined. Wash their heads and nostrils thoroughly with a weak solution of boracic acid and warm water, using your finger and thumb to squeeze the nostrils out, and clean out the cleft of the top of the mouth with a feather. This process must be continued until a cure is effected. Disinfect all houses and yards thoroughly with a strong solution of disinfectant.

Prevention is Better Than Cure.

Cut a kerosene tin in halves end-ways, which will give nine inches square of water surface. Supply their drinking water in this, and add one tablespoonful of kerosene twice a week, when the fowls show any signs of roup, and once a week in normal time. This remedy will destroy all nasal or internal disease germs, and is self-applied. Be careful that no other water is within reach during the kerosene process.

CALIFORNIA COMPETES FOR LONDON EGG MARKET.

The new season for eggs of Australian and South African origin has opened auspiciously enough as to quality and packing, but the early shipments from both countries have had the misfortune to meet a market well supplied with good eggs from many sources. This phase, of course, will soon pass, and then Empire eggs will realise the prices that their merits deserve. The only disquieting factor, from a producer's point of view, is the rapid growth of American competition at the time of year when Australian and South African poultry farmers have been in the habit of anticipating a comparatively bare market in Great Britain. This new move, like so many other new moves of a competitive character, comes from California, which, with its "perpetual spring," has, perhaps, more fertility than any other region of equal size in the world. It is a case of fertile minds working in conjunction with a

fertile soil, and it cannot be denied that Californian eggs are as excellent in quality as they are in pack. Still, there is nothing in either respect to which the best egg producers in Australia, New Zealand, and South Africa could not reach with method, co-ordination, and careful study of the British market.—"Imperial Food Journal."

Beekeeping.

When Do Introduced Queens Start Laying?

As a general rule, introduced queens commence laying the next day, but it sometimes happens that if the queen has been for some time prevented from laying—as in the case of an imported queen—she may not lay for three or four days; or even a week.

If introduced in the autumn, the queen may not commence laying at all until spring, unless the colony is fed regularly every day for a week or more. This will always start a queen laying—if she is any good at all—provided the weather is warm enough.

A large quantity of honey is generally expected in the autumn.

Because of the generous rains, conditions have been favorable for the flowering of the flora.

Passing some trees of Eucalyptus calophylla, the autumn white flowering variety, there was an insistent murmur from the large number of bees which had been attracted.

The beefarmer who knows his location will have a good idea regarding the time trees generally commence to flower, and much can be done to prepare the colonies to obtain best results.

A good plan is to give stimulating food for some weeks previous to the flowering period, it being better to start the bees artificially and to let them come into natural conditions in good spirit, rather than to allow them to wait and make their own start after the flow comes on.

The worst enemies of beekeeping are foul brood and bee paralysis.

Cleanliness is imperative. Only frame hives should be used. Destroy all cocoons, moths and larvae about the hives. The hive timber should be stout enough not to warp or split; boxes should fit closely to the bottom board, otherwise moths enter and lay eggs.

Take away empty or partly filled combs, else the odor will attract the wax moth, which will come and lay eggs.

Bees must not be allowed access to honey outside their own hives.

Hives of bees are of value on orchards, as the bees are invaluable for assisting cross-fertilisation.

"The Australasian Beekeeper"

The leading Bee Journal in the Southern Hemisphere.

A monthly magazine entirely devoted to beekeeping. Published in Australia for Australian Conditions. Subscription (5/- per year, prepaid, post free), may start now.

Free sample copy available on application to the publishers, Pender Bros. Ltd., Box 20, West Maitland, N.S.W.

S. AUSTRALIAN FRUITGROWERS —MARKET GARDENERS.

Optimists, Philosophers.

An Appreciation.

(By Fred Charlick.)

LET me give a few particulars about the men who produce the wealth from the hills districts. I have been closely associated with them all my life, and I have a very great regard for their outlook and make-up. They have a good standing in the community, they are all good Australians, and they are the second and third generations of the men who pioneered the gardening industry in the hills, who had all the difficulties of clearing the scrub, and when the roads were mostly tracks, their experience as to the possibilities of results had to be bought, and sometimes very dearly. They worked very early hours in the market in those days, leaving home at 1 o'clock in the morning to catch the 3 o'clock markets three times a week—that meant a day's work before other people had started. They made the best of their opportunities, and obtained the utmost out of their land, and in those early days the outlet of

their produce was limited and very often unprofitable, but their persistency and hard work founded the market gardening industry, and to-day the two markets are an indication of the growth resulting from their efforts.

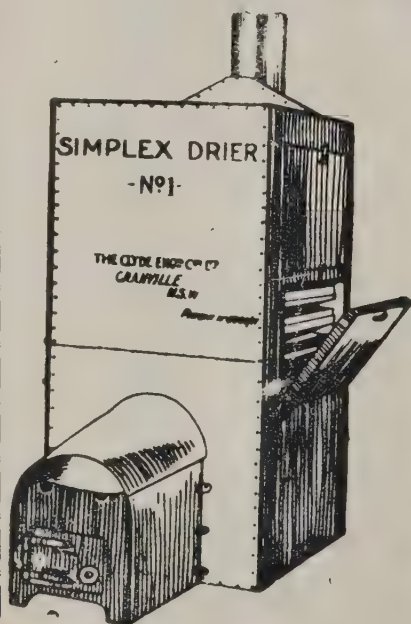
The present generation are mostly young men, and they are full of resource with untiring energy, quick and watchful to detect and combat adverse conditions, with strict attention to detail. They work long hours, before sunrise till sundown, and theirs is no job for "waterside workers" with their heart-breaking, back-breaking labor, combating pests, codlin moth, thrip, red spider, scale, etc., and other adverse conditions as blasting hot or cold winds, frosts, hail, etc.

There is no rule of thumb with these gardeners. Their holdings are marvels of intense cultivation; they are skilled and methodical workers, and take the utmost interest in all their productions, and the results of it all are seen in the character and quality of the big loads that are brought into the markets three days a week, and the heavy crops that they yield is astonishing, and they are justly proud of the high standard of excellence.

There is a good deal of fraternity existing amongst them as neighbors, and they have a mutual exchange of ideas, and supply one another with seeds and cuttings. The outdoor life keeps them healthy, and, notwithstanding their hard work, are fond of sports, and every district has its own sports ground, and are also great readers, and follow the news of the day, politics, etc., and they have wireless installations in their homes, and their gardens are their life's hobbies.

There is a lot of romance in the loads of produce that these men bring to town, the job of clearing the land, combating pests, and adverse climatic conditions, long hours, low market prices, and against all of these is the healthful outdoor life and the satisfaction of co-operating with nature in a partnership and getting the best out of their storehouse.

Their characters are developed by the constant struggle against adversity, and hard work has made them strong and self-reliant, and nothing deters them. If market gardening were just one pleasant gathering of the best, a sort of holiday in the hills, without these difficulties, where would be the incentive to overcome and produce, and their very hardships are



The Clyde Simplex Driers

For Drying
Fruit, Vegetables and other Products

NO MORE WASTE FRUIT OR VEGETABLES

SIMPLE — SELF CONTAINED

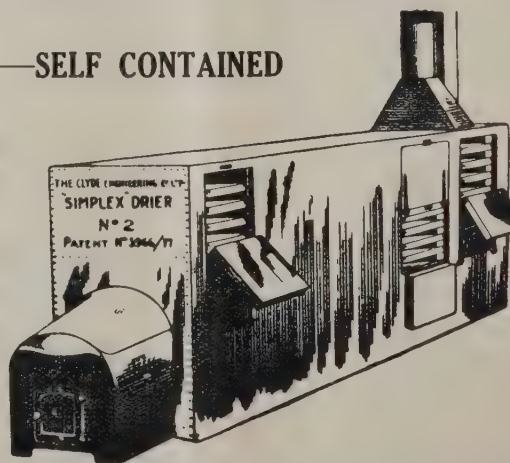
Made in Sizes to suit

Householders

Small Orchardists

OR

Large Factories



The Clyde Engineering Co. Ltd.
GRANVILLE, N.S.W.

READY-MADE ORCHARDS.

Opportunities in N.S.W.

Blocks of land ranging from 43 to 127 acres and planted with fruit trees of various kinds to the extent of 10 to 15 acres have been thrown open for settlement by the N.S.W. Government at Young, Kingsvale, Maimaru, Quamby, Wirrimah and Waterview.

All the blocks have been securely fenced, and planted with Prunes, Apples, Pears, and Cherries. The trees are now approaching full bearing, and were planted and developed under expert supervision.

Soldier settlers already occupy 106 blocks within the settlements and have made satisfactory progress. Three central dehydrating plants are being established at a cost of about £40,000 for the treatment of Prunes from these areas. The plants will be the most modern procurable, and will be managed by local co-operative societies composed of the settlers, who will be afforded an opportunity of becoming absolute owners of them.

CUT TO THE QUICK.

A lady, soliciting for a charity fund, approached a Scotchman and handed him a card with the inscription:

"Charity Fund—Give Till It Hurts."

The Scotchman read it, then, with tears of grief in his eyes, handed it back to the fair solicitor.

"Lady," he said brokenly, "the verra idea hurts!"



SUPPOSING Fertilisers weren't needed what a lot of money would be saved. Under PRACTICAL conditions a lot of money would be lost if only one of those fleeting temptations to make a cut in the fertiliser bill were obeyed.

NITROGEN, once thought of little consequence in Australian agriculture, is now recognised as an important element of plant food, though there is still a lot of money being lost because the value of Nitrogen is not more widely appreciated.

Use more Nitrogen. Ask your fertiliser agent about SULPHATE OF AMMONIA. That's Nitrogen in its ideal form obtainable now in a "neutral" condition—dry, non-caking, and free-running.

Literature from

THE METROPOLITAN GAS COMPANY,
196 Flinders Street, Melbourne.

Telephone: Central 8162.

SA 1/28

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COVENT GARDEN, LONDON, ENGLAND
Fruit Brokers and Commission Salesmen

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44 Augusta Street, St. Peters, Adelaide

Who will give all information

Phone F 1214

Financial Facilities Offered

The Fruit Trade

Market Reports and News Items

REPRESENTATIVE FIRMS, FRUIT MERCHANTS, AGENTS, EXPORTERS, Advertising in this Journal.

NEW SOUTH WALES.

Sydney.

Chilton, F., City Fruit Markets.
Louey Pang & Samuel Wong Ltd.,
Thomas St., Haymarket.

VICTORIA.

Melbourne.

Andrew, Fred J., 416 Lit. Collins St.
Cave, F., & Co., Melbourne.
Davis, J., Western Market.
Dennys, Lascelles Ltd., Temple Court,
Melbourne.
Millis, A., & Sons, Western Markets.
Lister, G., Western Market.
Mills, J. B., & Co., Bank House, Bank
Place Melbourne.
Mumford, J. G., 449 Flinders Lane.
Pang & Co. Ltd., H. L., Little Bourke
Street.
Producers' Dist. Society, Western
Market.
Ross, J. W., Western Market.
Silbert, Sharp & Davies, Western
Markets.
Stott & Son, T., Western Markets.
Tim Young & Co. Pty. Ltd., Western
Market.
Vear, F. W., 49 William Street.
Woolf, G., Western Market.
Wholesale Fruit Merchants Assn., J.
D. Fraser, Temple Court, 428 Col-
lins St., Melbourne.

QUEENSLAND.

Brisbane.

Barr, A. S., Fruit Exchange.
F. B. Bolton.
Collard & Mackay, Fruit Exchange.
Comino Bros. Ltd., Fruit Exchange.
Cooksey & Co., Fruit Exchange.
Geeves, H. V., Fruit Exchange.
Robsons Ltd., Fruit Exchange.
W. J. Whitten & Co., Fruit Exchange.

TASMANIA.

Hobart.

E. R. Cottier Pty. Ltd., 88 Collins St.
Jones & Co. Ltd., H., Fruit Exporters.
Peacock & Co., W. D., Fruit Exporters.
and at London.
Piesse & Co., C.

Launceston.

Bender & Co. Pty. Ltd., 100 Elizabeth
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NEW ZEALAND.

Dunedin.

Co-operative Fruitgrowers' of Otago
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Margetson & Co., Ltd., Covent Garden.
Monro, Geo., Ltd., Covent Garden.
Pask, Cornish & Smart, Covent Gar-
den.
Poupart, T. J., Covent Garden.
Ridley, Houlding & Co., Covent Gar-
den.
Swann & Co., 3 Salter's Hall Court,
Spitalfields Market, E.1.

Hull.

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Railway. Rep., Major H. S. Cole,
c/o Burns, Philip and Co. Ltd., 7
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Manchester.

The Port of Manchester, rep., W. J.
Wade, 8 Bridge Street, Sydney.

GERMANY.

Bremen.

Fruchthandel, Gesellschaft.

Hamburg.

Astheimer, P. H., & Son, Fruchthof.
Lutten, J. H., & Sohn, Hamburg.
Stier, Aug., Fruchthof, Reps. J. B.
Mills & Co., Bank House, Melbourne.
Timm & Gerstenkorn.

New South Wales.

Sydney (15/3/29).

Mr. F. Chilton, City Fruit Markets,
reports under date 15/3/29 as fol-
lows:—

Apples of good dessert quality are in demand at satisfactory prices, and prospects for the whole season appear exceptionally bright. Queensland Pine-apples have been considerably affected for some weeks with what is known as Water Blister, and heavy losses have occurred in consequence. Grapes are plentifully supplied, and depend greatly on weather conditions for satisfactory sales. Peaches and plums may now be considered as practically at the end of their season.

Queensland Fruits.—Bananas, 14/- to 27/6 per case. Pines, smooth leaf, 6/6 to 14/-. Tomatoes, 6/- to 11/- per half case. N.S.W. Fruits.—Bananas, Tweed River, 14/- to 27/6 per case. Lemons, 15/- to 24/- per bus. case. Oranges, Valencias, 9/- to 14/-. Apples, Jonathan, 10/- to 17/-; London Pippin (green), 8/- to 10/-; Granny Smith, 10/- to 13/-. Pears, W.B.C., 11/- to 14/-; Packham, 9/- to 12/-; W. Cole, 8/- to 11/-. Quinces, 5/- to 8/-. Cucumbers, 3/- to 5/-. Passions, 12/- to 20/- per half case. Peaches, irrigation areas, 3/- to 4/-. Plums, 4/- to 10/-. Grapes, B. Cornichon, 6/- to 8/-; Muscat, 6/- to 11/-; white, ordinary, 4/- to 6/-. Persimmons, 3/- to 6/-. Victorian Fruits.—Peaches, 6/- to 9/- per bus. case. Tasmanian Fruits.—Apples, Worcester, 8/- to 12/-; Alfriston, 6/- to 9/-; Alexander, 6/- to 9/-. Pears, G.B., 3/- to 5/6 per half case; B.B., 3/- to 5/-; B.D.C., 3/- to 5/-.

Victoria.

Melbourne (27/3/29).

The following wholesale prices supplied by the Wholesale Fruit Merchants' Association of Victoria are

those ruling at the Western Market. Some special lines brought higher prices, but considerable quantities were sold at lower prices owing to inferior quality, bad packing and grading:—Apples, good to choice eating, 8/- to 12/-; good to choice cooking, 5/- to 9/-, a few specials higher. Green Bananas, Queensland, special, 28/- to 30/-; choice, 22/- to 27/-; standard, 16/- to 21/- per double case. Grapes: Cornichon, up to 12/-; Waltham, up to 11/-; others, 7/- to 10/-. Lemons, best quality up to 18/-, others at lower prices, according to quality. Valencia Oranges, 16/- to 20/-. Passion Fruit, 10/- to 14/-. Peaches, yellow cling, 2/6 to 5/-. Pears: Eating, 5/- to 9/-; few specials higher. Pineapples: Queens, 10/- to 16/- per double case.

The Victorian Central Citrus Association reports as follows:—Sales during the early part of the week have been as follow:—Mildura and Woorinen Grapes: Cornichons, good average lines, 11/- to 13/-; Walthams, 10/- to 12/-; Muscatels, 8/- to 11/-; medium lines being 2/- to 4/- lower, and specials 2/- to 4/- higher, according to the variety. Thursday's sales were as under.—Walthams, good average, few, 9/- to 11/-; Muscatels, few, 7/- to 9/-; others, from 4/-. Bendigo Tomatoes, 5/- to 7/-. Valencias, few, 140-184, to 21/-; specials higher. Lemons, colored, medium to 21/-, some higher.

Queensland.

Brisbane (25/3/29).

Local Fruit.—Apples, eating, 9/- to 20/- a bushel case; cooking, 9/- to 15/-. Quinces, 4/- to 8/-. Pineapples, smooth, 1/- to 7/- a dozen, 6/- to 11/- a case. Grapes, Muscats, 7/- to 10/- a case; G.C., 6/- to 7/6; white, 5/- to 6/-; W.C., 10/- to 13/-. Lemons, colored, 6/- to 7/- a quarter case; green, 3/- to 4/-. Limes, 4/- to 5/-. Oranges, common, colored, 8/- to 10/-; green, 5/- to 7/-; navels, colored, 9/- to 11/-; green, 6/- to 8/-. Grapefruit, 6/-. Persimmons, 3/- to 5/-. Passion Fruit, 12/- to 13/- and 6/- to 8/-. Custard Apples, 5/- to 8/-. Imported Fruit. — Lemons, N.S.W., 20/- to 22/- a bushel case; Vic., 20/-; South Aust., 28/6; American, £2 to £2/3/- a double case. Oranges, N.S.W., 18/- to 20/-; Californian navels, £2/6/- to £2/10/-. Pears, Vic. Caps, 9/- to 11/-; H., 4/- to 11/-; W., 13/- to 14/-; Tas. C.B., 9/- to 11/-; Caps, 6/- to 11/-; N.S.W. W.C., 13/- to 14/-. Apples, Tas., C.O.P., 15/- to 17/-; W.P.M., 15/- to 17/-; D., 15/- to 17/-.

Western Australia.

Perth (26/3/29).

Apples, Jonathans, flats, 8/6 to 14/-, special to 17/-, others from 4/6; Dunn's, 6/- to 11/-, others from 3/6; Granny Smiths, 6/- to 15/6; Cleos., 5/- to 10/-, others from 3/-; other varieties, 3/- to 11/3. Pears, Bartlett's, 9/- to 12/-, special to 15/-, others from 1/-; other varieties, 3/- to 10/9. Plums, 10/- to 19/-, special to 27/3, others from 6/-. Oranges, Valencia, 12/- to 26/-, special to 31/9, others from 12/-. Lemons, 10/- to 18/-, others from 5/-. Peaches, 9/- to 16/-, special to 20/9, others from 5/-. Quinces, 3/- to 8/-. Grapes, open, white, 4/- to 12/-; colored, 5/- to 14/-; closed, 2/- to 7/-. Passion, 12/- to 20/-, others from 7/-. Figs, 2/- to 4/6.

South Australia.

Adelaide (28/3/29).

Apples, eating, 13/- per case; cooking, 9/- per case. Bananas, Queensland, 30/- to 34/- per case. Figs, 10/- to 12/- per case. Grapes, dark, 8/- per case; white, 8/- per case. Lemons, 10/- to 12/- per case. Melons, pie, 4/- per cwt.; sweet, 8/- per cwt.; water, 5/- per cwt. Nuts: Almonds, 8/- to 10/- per dozen lb.; Brazil nuts, 12/- per dozen lb.; peanuts, 11/6 per dozen lb.; walnuts, 12/- per dozen lb.; Barcelona, 12/- per dozen lb. Oranges, common, 10/- to 12/- per case. Passion Fruit, 22/- per case. Peaches, 7/- to 8/- per case. Pears, eating, 8/- to 9/- per case; cooking, 5/- per case. Pineapples, 18/- to 20/- per case. Plums, dark, 7/- to 8/- per case; Damsons, 9/- per case. Quinces, 4/- per case.

Tasmania.

Hobart (1/4/29).

St. Law, 3/- to 8/6; Lady Snows, 3/6 to 9/-; N.Y.P., 3/- to 7/-; Delicious, 6/6 to 8/6; Jon., 6/- to 9/-; C.O.P., 3/- to 7/-; J.G., 3/- to 5/6; Alex., 3/- to 5/-; Alf., 3/- to 5/-; B.C., 3/6 to 4/6; R.P., 2/6 to 5/6; W.P.M., 3/- to 8/9; K.D., 2/- to 5/6. Pears: B.B., 3/- to 9/-; B.D.C., 1/- to 3/-; D.C., 3/- to 5/-; G.B., 3/- to 6/-; N.P., 2/- to 3/-; L.B.J., 2/- to 4/-. Quinces, 4/- to 6/- case. Peaches, 10/- to 12/- case. Tomatoes, 3/6 to 14/6 case; ditto, 2/6 to 7/6 per half case.

New Zealand.

Dunedin (21/3/29).

Messrs. Reilly's Central Produce Mart report prices ruling as follows:—

Apples: Choice Cox's, 10/- to 12/6, others 5/- to 8/-; cooking, 5/- to 7/-. Dessert Pears: Capiaumont, dumps, choice, 8/-; Beurre Bosc, 9/-; Confer-

ence, choice, 8/- to 9/-. Cape Gooseberries, 5/-. Egg Fruit, 6/-. Passions, 4/- to 6/-. Navel Oranges, Sunkist, 40/-. Lemons, Missions, 40/-. Grapefruit, 40/-. Bananas, 40/-. Pines, 28/- per case. Cocoanuts, 18/- per sack. Nectarines, 4d. to 5½d. Peaches, 3/6 to 5/6; crates, 3d. to 5d. Plums, jam, 3/6 to 4/6; dessert Plums, crates, 2½d. to 5d. Blackberries, 3d. to 6d. Quinces, 1½d. to 2½d. Christchurch Tomatoes, choice outside, 3d. to 4d.; seconds, 2d.; locals, 4d. to 7d.; Otago Centrals, 3d. to 5d. Grapes, 8d. to 1/3; Gros Colmars, 1/10.

FRUIT WITH EVERY MEAL.

Australia Lags Behind Other Countries.

Growers Must Bestir Themselves to Effect the Necessary Improvement.

Here is an extract sent in by one of our thoughtful growers—from "Autumn Fruit" (A Fronded Isle—E. V. Lucas):—

ONE OF THE FIRST criticisms that our Latin visitors—and often our American visitors—utter bears upon our poverty in the matter of fruit. The automatic presence of dessert on the lunch—and dinner—tables of France and Italy does not exist here, and is missed. And when, in a restaurant, in obedience to an order, it comes, the price is staggering.

And yet the odd thing is that, although the ordinary housewife and caterer treat fruit as a luxury, the casual stranger in the busier London streets would assume that we ate it all the time, so many barrows of it would he see; which shows how unsafe it is to generalise.

Office boys and office girls bring to fruit a respect that is almost Continental, but it is doubtful if they carry it into maturer life. As husbands and wives, fathers and mothers, they will probably be as little fruitarian as the rest of the race. They will forget, just as, on returning home, English travellers in France and Italy and Spain forget.

While we are abroad, how often do we remark, "Aren't these little Grapes a joy!"

"Why on earth can't we be as sensible as these people, and always have fruit?"

"My dear, do let us always have fruit on the table. And real fruit—something beside Bananas."

"Of course, darling."

But for how long are such good resolutions remembered?

NEW VARIETIES OF APPLES.

Milton is one of several new varieties created by the fruit breeders at the station to prolong the season of the McIntosh type of Apple. It is notable for its size and beauty, but its chief value lies in the fact that it ripens its fruit a month or six weeks ahead of McIntosh, coming into season after Early McIntosh. It is a cross between Yellow Transparent and McIntosh. The fruit is most attractive in color and has the characteristic McIntosh taste and aroma. The tree is all that could be desired, and is as vigorous and healthy as that of McIntosh.

Red Gravenstein is a typical Gravenstein Apple except that it has a solid red color, while the common Gravenstein is light red, striped with yellow and green. Since the market favors a red Apple, the new variety should be set in preference to the old sort. Red Astrachan No. 2,391 is also an "improved" Astrachan in that it is a better colored fruit than the common Astrachan, which it resembles in every other respect, and is an annual bearer.—"American Fruitgrower."

"GROW MORE FRUIT" CAMPAIGN ADVOCATED IN ENGLAND.

Nurserymen in England have evidently been convinced by the success of the "Eat More Fruit" advertising campaign, that the same method could be applied to the sale of fruit tree stocks, with equal success.

Much has already been done to increase the sales of Rose trees throughout the British Isles by advertising campaigns, and this has been a further incentive to push the sale of fruit trees by similar means. One grower writing to the "Horticultural Advertiser," suggests co-operative advertising by all who have stock to sell, because co-operative advertising produced results at a low cost. What the trade needs is a leader. The Trade Mark Seal, he states, is just as practicable a method of raising funds for an advertising campaign for fruit trees as Roses. All that is needed is the spirit of co-operation.

The writer concludes with the slogan: "Grow More Fruit," which, he states, should be used in all advertising.

A campaign on similar lines could be adopted in Australia with considerable profit to the trade. The growing of nut trees in home gardens should receive particular encouragement.

Topworking Cherry Trees.

The more profitable use of Cherry trees, particularly some of the sweet varieties, is one problem that is occupying the attention of growers in Ontario, where this fruit is grown, states an expert in "Canadian Horticulture." This problem is due to various factors such as low yields caused by imperfect pollination, the occurrence of seedling trees which generally produce fruit of small size and poor quality, or the presence of varieties that do not command a good price on the market. Where poor results are due to any of the above-mentioned factors and the trees are healthy, and not too old, it would seem desirable to convert them into better trees by top-working with superior varieties.

The sweet Cherry, and in fact, all species of Cherries, have generally been rather difficult to topwork by the common methods of grafting. In recent years, however, improvements of these methods have been discovered which make it possible to get a good set of scions when the work is done properly.

The most important feature of these changes consists in preventing the scions from drying out, and in doing the work early in the season. The prevention of dessication may be done by coating the entire scion with warm paraffin wax or by covering with paper bags. The preference of the writer is for the wax method, the details of which are shown further on in this article. Sweet Cher-

ries, and in fact, all kinds of stone fruits, may be topworked by various methods of grafting, but for the beginner the cleft graft is one of the best to use. The details of this method are given hereunder:—

1. Select for grafting well placed foundation branches of any size from one-half inch up to three inches in diameter. On small trees it is feasible to graft all the branches required for the new top at one operation, but on large trees it is better to spread the grafting over two seasons.

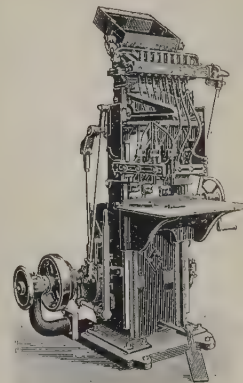
2. Saw off these branches with a sharp saw moderately close to central axis of tree—say one and one-half to three feet out.

3. Split branches horizontally with a strong, sharp butcher-knife to a depth of two to two and one-half inches.

4. Cut scions to wedge shape with wedge one and one-half to two inches long—and one side thicker than the other. In cutting scion take care to have the topmost bud directly above cut surface.

5. Insert screw-driver in centre of cleft and gently pry out until cleft is open enough to permit of scions being set in position.

6. Set scions in ends of cleft so that cambium contact is established between stock and scion. This is absolutely necessary and can be done by placing scion so that the upper part of the wedge section projects very slightly beyond the rim of bark and the lower tip of wedge is slightly inside of bark. Withdraw screw-driver and allow branch to close on scion.



Bohm & Kruse's

Case Nailing, Case Printing and Shook Splicing Machines which are Time Saving and Profit Increasing.

Keep yourself acquainted with modern developments in machinery. Every new labor-saving device must affect you. If your competitor adopts it, it HANDICAPS you; if you adopt it, it AIDS you.

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LTD., Collins St., Melb., and
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RINNE HARRIS Pty. Ltd.
434 Collins St., Melbourne

Irrigation Hose in heavy Finest Scotch Duck

	A	B	C
3-inch	5d.	6d.	7d. per foot.
4-inch	6d.	7d.	8d. " "
5½-inch	7½d.	9d.	10d. " "
7-inch	10d.	12d.	13d. " "
9-inch	14d.	17d.	18d. " "
11-inch	16d.	18d.	19d. " "

HAY STACK COVERS

For Hay and Lucerne Stacks, etc.

	3-Star.	4-Star.
12 x 20	£2 3 0	£3 1 6
12 x 24	2 13 6	3 15 0
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18 x 24	4 2 6	5 9 0
18 x 30	5 2 0	6 15 0
21 x 30	5 17 6	7 17 6

We can supply these covers in any length, 3ft., 6 ft., and 9 ft. wide, suitable for covering drying racks.

Any other size at same rates. Ropes, 3/6 Extra.

Verandah Blinds, Window Blinds, Duck Tarpaulins, Tents, Camp Stretchers and all Classes of Canvas Goods.

Large Stocks of First-class Secondhand Sacks.

Please write for prices and samples.

WYETT MFG. CO. PTY. LTD.

21-23 BELLARINE STREET, GEELONG, VICTORIA.

'Phone 1688.

7. Thoroughly coat all cut surfaces and points of contact with warm liquid grafting wax, taking special pains to fill all crevices.

8. When this has been done, apply hot paraffin wax to all exposed surfaces of scions, taking special care to cover every portion, buds included. The application of paraffin wax pre-

vents drying out of scions and next to securing cambium contact is the most important factor in getting a good stand of scions.

9. Wrap cotton bandage around stock branch just below where saw cut was made. This will prevent the bark from turning out and thus helps to get a higher percentage of scions

to grow. The bandage should be removed in late summer after scions have become established.

10. Grafting is best done early in spring before any growth starts, but may be done a little later if scions are cut while dormant and kept perfectly fresh.

For Quality Fruit and Vegetables



KILL INSECTS!

AS A SPRAY, "Black Leaf 40", Nicotine Sulphate, kills aphids, thrips, leaf-hopper, red-bug, psylla, etc., both by contact and by its nicotine fumes. Combine it with Lime Sulphur, Lead Arsenate, Bordeaux, etc., if you wish, and make one spraying do double duty.

AS A NICOTINE DUST, for orchards, truck crops and gardens, mix "Black Leaf 40" with an alkaline carrier such as Hydrated Lime, as described in our free spraying and dusting chart.

"BLACK LEAF 40" is the world's leading nicotine insecticide. Endorsed by Experiment Stations. Deadly to all soft-bodied sucking insects. Non-injurious to foliage. Ask your Experiment Station.

KILLS BY CONTACT and FUMES

While the effectiveness of "Black Leaf 40" is primarily dependent upon direct contact (wetting), a secondary advantage is furnished by the "gassing" effects of the penetrating nicotine fumes set free in the spraying material. This two-fold action is an advantage not possessed by any non-volatile spraying solution.

"BLACK LEAF 40" CONTROLS POULTRY LICE

The treatment requires only a small paint brush, a can of "Black Leaf 40" and a few minutes' time for "painting" the solution on top of the roosts. Easy, effective and cheap. Eliminates all individual handling of birds. Ask your Dealer for information or write us.



Just "Paint" It On the Roosts

Kills lice on your entire flock, whether 50 birds or 5000. When chickens perch upon roosts that have been painted with "Black Leaf 40", fumes are slowly released that penetrate the feathers and kill the lice.

TOBACCO BY-PRODUCTS CHEMICAL CORPORATION, Incorporated
Louisville, Kentucky

"Black Leaf 40"

40% Nicotine



Sold by leading Dealers in Australia and New Zealand.

Apple Pulp is Profitable.

Other Fruit Pulp, Too.

A Delicious confection is Easily Made.

A confection that rivals the finest of sweets may easily be made from fruits now going to waste in many parts of the State, according to Miss Lucile Brewer, foods specialist of the college of home economics at Cornell University, N.Y., U.S.A. Fruit paste may be made from the pulp of Apples, Peaches, Plums, Pears, and Elderberries, alone or in combination with other fruits after the juice has been drained off for jelly.

To make the paste, cook the fruit with water until tender, press it through a colander and then a strainer, measure, and to one pint of pulp add one cup of sugar. Cook the mixture until it is thick and clear, being careful not to allow it to scorch. Turn it on to a slightly greased platter

and set in an airy place to dry. When a film has formed over the top turn it on to a cloth on a wire screen and dry it until it loses its stickiness. Lay it on paraffin paper, roll it in a small roll, and pack it in tin boxes or glass jars.

The paste may take a red, yellow or green color depending on the fruits used. It may be cut in narrow strips or small squares and rolled in granulated sugar, or it may be rolled as tightly as possible and cut in thin slices like a cinnamon roll. It is not only delicious when served as a confection but it may also be used for garnishes or in salads, fruit cocktails and desserts. If cut in small pieces and rolled in flour it may take the place of citron in cakes, cookies and puddings.

Mint flavoring and green coloring added to plain Apple paste will make a mint paste. Small squares of paste may be rolled in finely-chopped nuts or shredded coconut.

JAPANESE BEETLE.

Attacks U.S.A. Orchards.

Since its accidental introduction into U.S.A. in 1913, the Japanese beetle has increased enormously, and is responsible for much damage in American orchards. They feed on ripening fruit, foliage, blossom, vegetables, and ornamental trees.

The Japanese beetle presents a striking and beautiful appearance with its prevailing color effect of a shiny bronze green, set off by green-edged tan or brown wing covers and by conspicuous white spots along the green sides of the abdomen. The two spots usually showing just to the rear of the wing covers are especially distinct. In size, this insect is about as large as a potato beetle, except that the Japanese beetle is a trifle longer. Several of its much less important relatives have repeatedly been confused with this beetle, but none of them will entirely tally with the color scheme for the Japanese beetle as given above.

Soil Cultivation is Essential for Successful Fruit Culture



Tractor Working the "Harvey" Two-way 16-Plate Power Operated Disc Cultivator, cutting 9 feet.

Progressive Farmers and Orchardists

USE

"HARVEY" FARMING IMPLEMENTS

Single, Double and Three Furrow Plows.

Disc Plows, Subsoil Plows.

Disc, Spring and Rigid Tyne Cultivators.

Vineyard Plows and Cultivators.

Harrows, Berry Hoe, Scuffler.

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Tractor, Mouldboard and Disc Plows, Cultivators, etc.

Write for Descriptive Catalog,
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D. HARVEY

Implement Manufacturer,
Box Hill, E.11,
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Agents All States.

Clean Fruit Assured

When Neptune Sprays are Used

NEPTUNE
Prepared Spraying Oils
"A" and "C"

BERGER'S
Arsenate of Lead
(Paste and Powder)

SICILIAN
Sublimed Sulphur

NEPTUNE
Lime Sulphur Solution

BLAIR'S
Bordeaux Powder

AUSTRALIAN
Powdered Sulphur

NEPTUNE
Spray Spreader

GENUINE
Black Leaf 40

MAXIMUM RESULTS—
MINIMUM COSTS



All NEPTUNE SPRAYING MATERIAL can be obtained
through Agencies and Associations throughout Australia
or direct from

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ings, Grenfell
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c/o Taylor Bros.
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Launceston.

"CLEAN FRUIT" PAMPHLET & SPRAY CALENDAR SENT ON REQUEST.

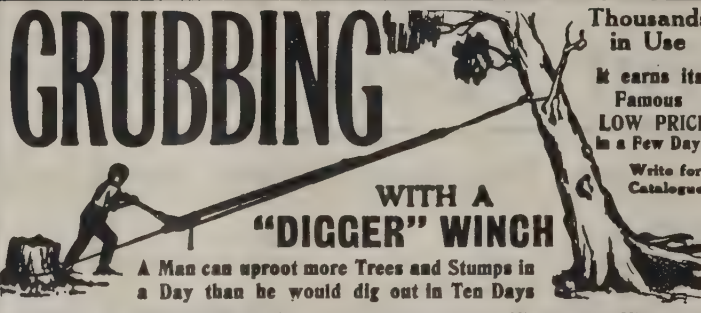
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Thousands in Use
It earns its Famous LOW PRICE in a Few Days
Write for Catalogue

WITH A
"DIGGER" WINCH

A Man can uproot more Trees and Stumps in a Day than he would dig out in Ten Days

QUICK MANUFACTURING CO., 75 Penders Street, Thornbury, Victoria



Ship Your Oranges,
Lemons, Grapes to
New Zealand



All consignments for this market will have careful attention and realize highest prices if sent to

The Co-operative
Fruitgrowers of Otago
Limited, Dunedin

Personal supervision of every consignment.

Cheques posted promptly.

Drop us a Line or Cable
"Peachbloom," Dunedin.

SUPPORT CO-OPERATION

By Consigning your
FRUIT to the

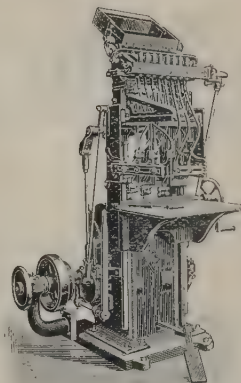
**Producers'
Distributing
Society Ltd.**

(Late Coastal Farmers' Co-operative
Society Ltd.)

— Agents for —

"BLACK LEAF 40"
and all Orchard Requirements

Melbourne Sydney
Newcastle Hobart
Launceston Devonport



Bohm & Kruse's

Case Nailing, Case
Printing and Shook
Splicing Machines
which are Time
Saving and Profit
Increasing.

Keep yourself acquainted with modern developments in machinery. Every new labor-saving device must affect you. If your competitor adopts it, it HANDICAPS you, if you adopt it, it AIDS you.

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MESSRS. GOODALL & CO.,
Kent St., Sydney.

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434 Collins St., Melbourne

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FRUIT BROKER

Copenhagen - Denmark

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Inquiries for Victoria and South Australia.

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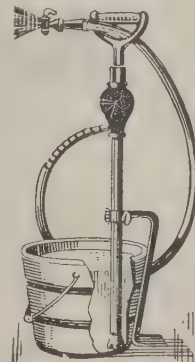
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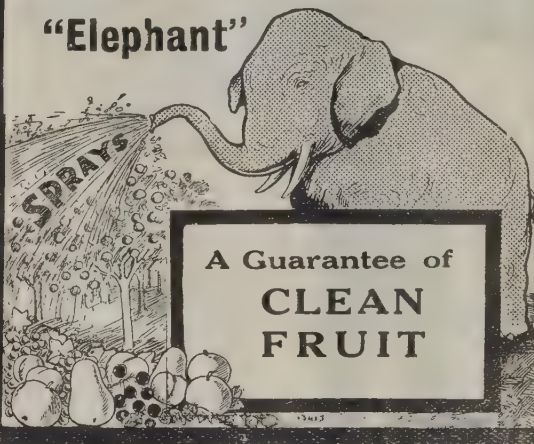
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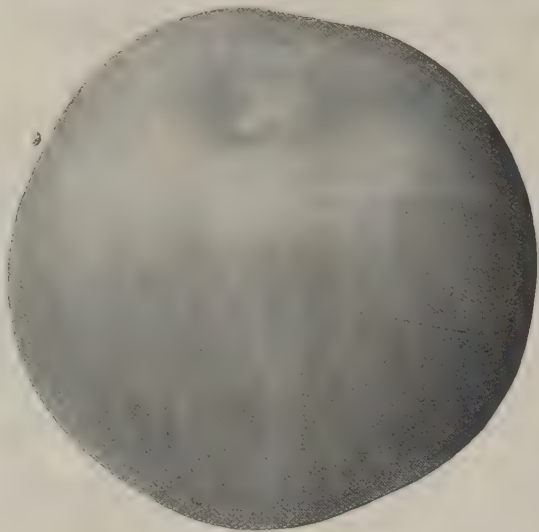
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AUSTRALIA'S EXPORTS TO THE EAST.

Statement showing Imports or Dried
Fruits and Vegetables into Japan,
Java and Madura, Hong Kong,
Malaya, China (not Hong Kong),
India and South Africa.

Japan (1926).—Vegetables, fruits
and nuts (preserved in tins, bottles
or jars), 6,063,800 lbs.; Australia's
share, 6,500 lbs.

Java and Madura.—Preserved and
dried vegetables (1925), £157,125;
Australia supplied goods to value of
£3,000 in 1924 and £1,240 in 1925.

Hong Kong (1923, latest available
figures).—Dried, salted and pickled
vegetables, 6,607,200 lbs.; Australia,
nil. Dried fruits, 133,017 lbs.; Aus-
tralia's share, 1,668 lbs.

Malaya. — Dried fruits (1926),
£377,265; Australia's share, £860.
Preserved vegetables, £340,000; Aus-
tralia's share, £74.

China (not Hong Kong) (1925).—
Dried and fresh vegetables (includ-
ing Potatoes), 16,875,600 lbs.; Aus-
tralia's share, 6,800 lbs.

India (1926-27).—Fruits and veget-
ables, dried, salted or preserved (not
being canned or bottled), 5,186 tons;
Australia's share, nil.

South Africa.—Dried fruits (1926),
83,344 lbs.; Australia's share, 3,080
lbs.

Fruitgrowing in New South Wales

Important Matters are Listed for Discussion at Growers' Conferences.

Cultural and District News.

Crop Reports.

THE Fruitgrowers' Federation of N.S.W., which is now firmly established because of the orchard tax of 1/- per acre, is holding its annual series of conferences.

District conferences are being held as follows:—Northern District, Armidale, April 30; Metropolitan, Windsor, May 4; Southern, Cootamundra, May 7; Irrigation Areas, Yenda, May 9; Central Tablelands, Bathurst, May 14; Central Coast District, Gosford, May 16; while the Annual General Conference will be held at Sydney on June 12, 13, and 14.

The Metropolitan district has prepared resolutions requesting: (a) The total prohibition of citrus fruits; (b) prohibition of fruits from any country where "White Fly" exists; that a number of recommended agents be appointed by the Federation; that the Federation supply a list of agents handling imported fruits; that the rate of commission for selling be not increased; that the markets be transferred from congested Sydney to a convenient suburb, citrus fruits to be marketed from a separate floor; that better organisation is needed among the citrus growers; that the Federal Government subsidise up to ruling market rates growers who wish to exploit the overseas markets; subsidised cold storage space for China; preservative processes for fruit; that the whole of the orchard regulation fees be controlled by the Federation; more careful handling on railways; that fumigation costs be 1d. per tree; reduction of duties on growers' necessities.

Southern district growers will move in favor of the Apple and Pear grading regulations being brought into line with those of U.S.A., Canada, and N.Z.; that the forcing of Cherries be prohibited; that a delegation visit U.S.A. to study the utilisation of lower grade Apples and Pears in the manufacture of cider, vinegar, and other products; levy for advertising fruit; approval of the 26 x 5 x 6 case for Cherries; improvement of marketing conditions; growers' representative on Sydney markets; that all orchard registration fees be handed over to the Federation.

The Irrigation Areas District Conference has listed resolutions favoring the prohibition of imported fruits;

improvement of city markets, and stricter supervision of fruit entering the markets; research into production of pure fruit beverages and syrups, and district labelling of synthetic drinks; departmental opinion re artificial coloring of Oranges; sulphuring fruit and allowing 17½ grains per lb. as in Canada; fruit products laboratory on migration area.

Regarding the codlin moth, the Leeton branch desires the Department to carry out a series of tests as to the efficiency of dusting. Regulations re bandaging should be drastic, and the number of sprayings increased if necessary.

The Yenda branch desires the Agricultural Department to rescind the regulation in regard to the dust gun treatment of pome fruit trees, as the dust gun is deemed superior in the calyx stage. With reference to dried fruits, Yenda will move that grading of dried Apricots for home consumption be limited to grading for one crown only; that the M.I.A. should have separate representation on the Dried Fruit Export Control Board. A further resolution from Yenda reads:—

"That in view of the absurd position in which the dried fruit growers on the M.I.A. are placed through the passing of the control vote in that the M.I.A. grower is losing up to £20 per ton on dried sultanas, and in view also of the fact that right on the time of harvesting the grower does not know how his crop is to be disposed for sale—the M.I.A. growers should move for de-control of dried vine fruits in N.S.W.

Other resolutions request that a standard weight per case be declared for export Grapes, improvements in railway facilities, assistance to growers of wine Grapes, investigation of Peach aphid, the breeding of parasites; that a census of fruit trees and vines in N.S.W. be compiled.

At the Central Tablelands District Conference, motions are listed favoring more district inspectors because of the codlin moth; investigation of dusting methods; appreciating the experiments at Bathurst; that fruit from Government farms be used to exploit fresh markets and improvements in railway matters.

At Gosford, where the Central Coast District Conference will meet, the agenda paper shows resolutions favoring prosecution of defaulters under the orchard tax provisions; that the Federation be organised on sectional lines, the funds being allotted in proportion to the amounts received from the growers in each section; tightening up regulations re imported fruits and total prohibition of citrus; active steps to form local co-operatives for better regulation and distribution of fruit; a levy on all fruit sold to cover losses on export; a bounty of 5/- a case on the export of citrus; improvements in wholesale and retail marketing; prohibition of the marketing of immature Oranges; improvements in fertiliser business, and the conducting of controlled experiments; the compilation of crop reports, and making same available promptly to growers.

THE COMING CITRUS CROP.

Mr. C. G. Savage, Director of Fruit Culture, Sydney, advises as follows under date April 15, the estimated yield of the approaching citrus crop is, over the whole State, Navels 60 per cent., Valencias not more than 50 per cent., Common Oranges 15 per cent., Mandarins 70 per cent., and Lemons about 30 per cent.

The heaviest crops are on the Murrumbidgee irrigation area, and along the Hawkesbury River flats, in which districts, however, Washington Navel and Valencias are chiefly grown with a smaller area of Mandarins.

Last season the crop would be called about 100 per cent. crop, in which the production was probably:—

	Bushels.
Valencias	900,000
Navels	600,000
Mandarins	500,000
Lemons	400,000
Common Oranges . . .	300,000
Asst. varieties	100,000

The lightest crops are in the Kurrajong and Hills Districts, chiefly in Common Oranges, Navels and Valencias, the latter varieties being very light, also in the Gosford-Wyong district.

ROYAL SYDNEY SHOW.

Interesting Fruit Exhibits.

(By Our Correspondent.)

Considering that the Royal Agricultural Easter Show at Sydney was accompanied by rainy weather conditions, the gate receipts and attendance were highly satisfactory. The former amounted to a total of £41,798, while a grand total of 620,730 people paid for admission.

So far as fruit classes are concerned, the quality of exhibits generally was of a fine standard, and did justice to the districts and individual growers represented.

In point of number, too, the entries were all that could be desired, save for the fact that classes in the dried fruits section were not well patronised. This is disappointing to the officials, naturally, for they take all reasonable steps to induce packing houses to take advantage of this excellent means of publicity.

The best district collection of Apples was won by Hartley (N.S.W.) District Fruitgrowers' Association, while Goulburn and District Chamber of Commerce staged the best collection of Pears.

Messrs. Baaner Bros., Little Hartley, N.S.W., secured first prize for their collection of commercial Apples, while Mr. F. G. Stone, Belmont, Goulburn, was awarded No. 1 position for his exhibit of collection of commercial Pears. In the individual varieties of Pears, Mr. Stone was very successful also.

Judging of the various classes was left in the capable hands of Messrs. W. J. Allen, W. H. Broadfoot, C. G. Savage, J. M. Arthur, and F. Chilton, and the results of the efforts of these gentlemen met with approval on all sides.

CITRUS CROPS SHORT.

Consignments of early Siletta's and navels are now coming on to the Sydney markets. Needless to say, the citrus crops in this State will not be nearly so heavy as they were last season. The Central Citrus Association estimates the Orange crop to be not more than about 50 per cent. of the 1927 crop. The Lemon crop, too, will be a light one, though the falling off is not nearly so marked as in the case of Oranges. Prices all round should, of course, be much more favorable than they were last year under glut conditions.

It is rather early yet to estimate the degree of cleanliness of citrus crops or their quality generally.

Coomella Irrigation Area (April 22).—Harvesting of vine fruits is completed: quantities exceeded anticipation; from 3-year-old vines 2 tons to the acre were gathered. Most of the drying racks are of 8 and 10 tiers, and covered with iron.

Batlow Show.

The annual show of the Batlow Agricultural Society, held early in April, was well attended. The fruit, for which Batlow is so famed, was one of the best sections, the excellent quality, the bad drought year notwithstanding, exciting special favorable comment.

N.S.W. PRUNE GROWERS' ASSOCIATION.

A meeting of the executive of the Prune Growers' Association of New South Wales was held on April 16. Mr. J. M. Dixon presided.

It was decided to request the Leeton Cannery not to pack any prunes in cans unless approved by an association inspector and further, that all Prunes canned at Leeton or elsewhere be sold through association agents.

Prices.—As an adjustment of prices was needed to meet competition, it was decided to adjust same by reduction of the smaller sizes. Grading regulations having been gazetted, the Department of Agriculture was asked to notify all importers of American Prunes in order that future importations would be subject to the same requirements as locally-packed Prunes.

Marketing Board.—The executive being in favor, it was decided to obtain signatures, in addition to the 100 already signed, in order to have a poll of all Prune growers taken to determine the question.

Scientific Research.—Decided to request the Government to make available to the Council for Scientific and Industrial Research sufficient money to prosecute research into Prune growers' problems, particularly re dried fruits moth, sugaring, canning and dehydrating.

IMMATURE CITRUS.

Consignments of Oranges from Queensland, which have not come up to the required maturity standards, have been rejected at Melbourne by Inspectors of the Victorian Department of Agriculture.

ROTARY TILLAGE FOR ORCHARDS.

The subject of rotary orchard cultivation mentioned in the April "Fruit World" is referred to in a letter to hand from Mr. A. C. Howard, Managing Director, Austral Auto-Cultivators Ltd., Windsor-road, Northmead, N.S.W. This is a firm of agricultural and general engineers, manufacturers of Howard's Patent Rotary Hoe Cultivator, of which there are now some thousands in use throughout Australia.

They are adapted to work with seven different makes of tractors, and various models are supplied to suit all classes of work. The depth of the cut ranges from 2in. to 10in. and width up to 6ft. The firm mentioned states they are manufacturing Rotary Hoe Cultivators with engines built into them for working in confined spaces where it is not convenient to work a tractor, such as vineyard cultivation, all kinds of orchard work, and for working between the rows of sugar cane, etc. These machines are known as the Rotary Orchard Tiller and Sugar Cane Scarifier, and are supplied in any width of cut required from three to five feet.

The firm also manufactures a small machine with engine built in for nursery and market garden work, supplied in any width required from 16in. to 24in. This machine will work the land to the depth of eight inches, and is known as the Garden Rotary.

Austral Auto-Cultivators Ltd. enclosed photos, showing their implements at work, together with a letter from Mr. J. M. Weaver, fruitgrower, Castle Hill, N.S.W., stating that the rotary hoe cut down his working costs by 50 per cent.; the work was done in one-third of the time, the soil was left in better condition, and the trees cropped 30 per cent. better.

EXPORTING OHANEZ GRAPES.

Mr. H. R. Paton, Secretary Merbein Citrus Growers' Association, is sending a consignment of over 200 cases of Ohanez Grapes to Singapore, through Messrs. Dennys, Lascelles Ltd.

Sambo and his bride-to-be, Dinah, were on a shopping tour. When it came to a choice of bed-room suits, the salesman asked, "Do you want twin beds?"

Dinah looked at Sambo, then in an embarrassed voice said, "No, ah thinks it am best to get an ordinary bed 'n' let de Lawd decide 'f it will be twins."

The Citrus Position.

Marketing and Co-operation.

Need for Better Understanding.

(By "Secateur.")

FORECASTS in general, indicate that the citrus crop to be disposed of through Victorian channels will be of fair average quantity, that is to say, it will not demand any serious consideration of questions of export.

In this view, the grower will be mainly concerned for his profits in the maintenance of regular and even supplies to the wholesale distributors, and the time is opportune in view of the forthcoming annual conference of delegates from the citrus districts of Victoria, South Australia, and New South Wales, to make an endeavor to analyse the causes which may have contributed to the comparatively low prices which prevailed for the 1928-1929 crop.

Undoubtedly the general financial depression and the consequently diminished spending power of the community as a whole, was an important factor, especially as during that period there was a more than ample supply of cheaper pip and stone fruits ready to take the place of the more expensive Orange fruits.

The Lemon position was aggravated by the unseasonable weather during November and December, when, as a rule, the case trade for cured Lemons is very sound. As it happened, it was well into January before this branch of the trade recovered, by which time large quantities of Lemons had been lost.

An excellent barometer with which to read the Lemon position is provided by the railways refreshment services, and it is significant that during the months referred to the consumption of citrus fruit drinks at the principal stall, fell to 2,000 or 3,000 drinks per day, as against 6,000 to 9,000 per day for average November and December weather.

Another factor to which blame for lower prices have been attributed, was the large quantity of fruit which eventually arrived on the Melbourne market from the Murrumbidgee areas, but as against this over the whole season, one did not hear complaints from selling agents whether inside or outside the organised channels of distribution, of overloading by "gluts" in the ordinary sense of the term. It was at no time difficult to dispose of Murrumbidgee fruit, its quality and the excellence of the

pack, particularly from the Griffith shed, always made it good buying, and such a state of affairs must not be confused with the dumping of huge quantities of say seedling Oranges from N.S.W., or heavy and unexpected consignments of off-type Navels from other sources.

The main source of strength on the Melbourne market has always been the South Australian Navel pack, the quality of which commands always a best price, has the effect of holding up a price also for any other fruit which comes within measurable distance of the same standard. For a like reason the Griffith pack for once should be a welcome acquisition to the Melbourne market, but whereas the South Australian pack, which is fully controlled by the 95 per cent. organisation of the Murray River Citrus Association, and is put on the market strictly according to quota from day to day, the Murrumbidgee fruit was last season uncontrolled from any practical point of view.

Coming to the Victorian crop, it is not to be denied that during last season an alarmingly increased proportion of fruit was handled outside the V.C.C.A. organisation. Why this should have been so has been exercising the minds of growers, but while the reasons for it may be more or less evident, it would seem that those most concerned are not unanimous as to the remedy. At the same time such differences of opinion as have been expressed are really matters of detail, and do not in any way affect the main principles of successful marketing of any primary product as they stand evolved to-day.

It can be taken as admitted that citrus growers as a whole are overwhelmingly in favor of co-operative selling as the legitimate means of securing a fair average price for their produce, according to its grade or quality.

Co-operation is designed to secure control and regulation of the product as to its distribution and as a guarantee to the buyer of its quality.

To secure that control, the sympathy and adherence of the grower is a first essential—without this no co-operation in the proper sense of the word is possible.

So-called "compulsory co-operation" is a contradiction in terms, and

as such finds no place in American thought in the distribution of its citrus crop by the several main bodies there concerned. At best it is a remedy of last resort, and must always have behind it the resentment engendered by any interference with the innate rights of freedom of trade.

Once an organised body of growers have come sufficiently together to ensure control of its product, the methods it employs to market it become a matter of detail. Whether the channels of distribution are few or many seems immaterial, and the question resolves itself into a one of management, upon lines which will, in the first place be laid down by the growers themselves.

Taking the position as one finds it to-day, the whole organised marketing of citrus on the Victorian market is in the hands of the Federal Council, which is composed of representatives of the Murray River C.G.A. (South Australia), the organised sections of N.S.W. growers, and for Victoria, of the V.C.C.A. The V.C.C.A. provides the machinery to carry out the directions of the Federal Council.

Of these three constituent bodies, South Australia alone can be said to be efficiently organised. In New South Wales the Central Association is not greatly concerned with the Victorian market, but on the other hand the Murrumbidgee areas are vitally so. The attempt to organise these latter areas has only very recently been made—with what measure of success will no doubt be made apparent at the conference on May 7.

With regard to the V.C.C.A., it has been evident for some time that its members have become so divided in thought that the measure of control accorded to it by growers, has definitely diminished, and with it, of course, the income in levies, to which, with the proportion of levies from the other State organisations concerned, the Federal Council must look to carry on its work of marketing.

To look for the main cause of the dissatisfaction which has been expressed at district meetings and in the press from time to time, loss of confidence in existing arrangements is behind all the complaints. In restoring that confidence, the main remedy lies.

During the earlier years of its existence, the management of the V.C.C.A. was advisedly entrusted by its members to a small committee or directorate, who no one can say did not devote a great deal of time and ability in a very unselfish and gratuitous fashion to carrying out the

broad lines of policy as laid down from time to time by conferences. Financial considerations prevented any other course until such time as the business of the organisation had settled down to something like routine.

To-day the position has materially changed, and it is evident that some scheme of re-organisation, which will provide for direct representation on the board of management of all the district Associations comprising the V.C.C.A., is essential. The present board consist of one member from Mildura, one from Riverside (or more correctly, a portion of Riverside), and a town member. The two members first mentioned are, of course, available on the spot for reference in their own districts, but for the large majority of districts, any matter for discussion, comment or advice, must of necessity follow a devious and indirect course, with only the annual conference as the forum for thrashing out differences—which under existing conditions, cannot be regarded as a satisfactory expedient.

If, instead of the present form of board, which rightly or wrongly, is generally regarded as bureaucratic, the board were to consist of a director appointed from each district, matters of complaint, suggestion or controversy, would be dealt with locally in conference with that district's own director, who would then take the question to the board for decision. Whatever that decision might be, the grower or the district concerned would be prepared to accept the joint ruling of the board for the simple reason that he would know that it was the considered opinion of the whole of the districts, arrived at upon their combined voting power. It amounts to no more than a grant of franchise to growers through their own member of the Citrus Parliament.

While everyone is satisfied that the organisation is essential to the industry there is a wide-spread feeling that the grower has actually little or no voice in the management of his own affairs. It should not be impossible for the Victorian Association to achieve something of South Australia's success in getting its growers together, but this can only be done by the creation of an atmosphere of mutual confidence. The success or otherwise of this year's conference will largely depend on the attitude of the present board, and whether it is prepared to accept proposals for substantial reforms to accord with growers' views, which will make

membership attractive enough to induce a large proportion of those who are not now members of the organisation to come in to ensure that there shall be no further drifting away of former members.

The Federal Council should concentrate on devising a satisfactory scheme of market management which will bring about the proper co-operation of the grower, the agents and the council's officer in the market. It was for this purpose that the control of all marketing arrangements was transferred to the council, so that its operations should be free from any suggestion of dominance by any individual State, and that for marketing purposes so much of the citrus crops of South Australia, Victoria and New South Wales, as came on to the Melbourne market, should be treated as one, and be sold to the maximum advantage.

Victorian growers should realise that, in the event of any breakdown, they will be the first to suffer, and in that view devote their whole attention to the marketing problem, and to securing the necessary control of the general output for the body they have appointed to look after this side of their affairs.

CITRUS CROP IN SOUTH AUSTRALIA.

Mr. G. Quinn, Chief Horticultural Instructor, South Australia, states as follows (15/4/29):—The promise is for a fair crop of Oranges in this State. It promises to be larger than that of last season, which was well below normal, but at the same time the present crop cannot by any means be called a large yield.

I hope to be able to supply more accurate comparisons in a few weeks, when the fruits have begun to color up and become more visible throughout the trees.

The Queensland citrus crop will be only two-thirds of normal; the recent generous rains were too late to be of benefit to the citrus crops this season.

Magistrate: "I cannot conceive a meaner, more cowardly act than yours. You have left your wife. Do you realise that you are a deserter?"

Rastus: Judge, if you knew dat lady as well as I does, you wouldn't call me no deserter. Judge, I'se a refugee.

CITRUS CROPS IN VICTORIA.

The following estimated production of the coming citrus crop in Victoria has been kindly supplied by the Superintendent of Horticulture (Mr. J. M. Ward):—

Mildura District, including Merbein, Irymple, Mildura, and Red Cliffs:—

	Cases.
Navels	69,000
Valencia Late	38,000
Common Oranges, Mandarins, Seville, Grape Fruit	32,000
Lemons	14,000

Swan Hill District, including Nyah, Swan Hill, Tresco, Mystic Park, Mur-rabit, Cohuna, Kerang:—

	Cases.
Oranges, including Mandarins and Grape Fruit	120,000
Lemons	15,000

Goulburn Valley and North-East District, including Tongala, Kyabram, Shepparton, Cobram, Nathalia and Wangaratta:—

	Cases.
Navels	85,000
Valencias	60,000
Grape Fruit, Common Oranges, Mandarins and Seville	26,000
Lemons	35,000

Rochester District, including Bawmawm, Rochester, Nanneella, Echuca, Giregaree, Stanhope:—

	Cases.
Navels	20,000
Valencia Late	10,000
Common Oranges, Mandarins and Grape Fruit	10,000
Lemons	12,500

Doncaster District:—

Lemons	40,000
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With the exception of Rochester district, these figures show an increase on last season.

THE VEITCHBERRY.

A new berry of merit has been brought out by Laxtons, of England, known as the Veitchberry, in compliment to Sir Harry Veitch, a world famous horticulturist.

It is a cross between the Abundance Raspberry and a Blackberry, and is said to be twice the size of an ordinary Blackberry or Raspberry, and of the color of a well-ripened Mulberry. The flavor is sweet and delicious, having that of both parents combined. It is self-fertile and a strong grower and seems to be generally satisfactory where tried in England.

Sour or Immature Oranges.

How South Africa is Tackling the Problem.

AUSTRALIA is tackling the problem of the immature Orange by forbidding its sale until a required ratio of sweetness has been reached.

In many instances this is simply a matter of allowing the Oranges to remain longer on the trees.

South Africa, a country which is making rapid strides in its citrus industry, is also facing the "sour Orange" problem; a recent investigation brought some very interesting and surprising features to light. For instance, in some instances the leaving of the Orange on the trees did not increase the sweetness. This happened with a Navel variety, and is illustrative of the potent force of bud-selection.

Citrus growers in Australia will follow with the keenest interest the following information contained in a South African Bulletin, entitled "Solving the Problem of the Sour Orange," this being a paper read before the Triennial Conference of the Department of Agriculture, at Pretoria, in August last, by Mr. B. Hahne, B.Sc., M.Sc., Ph.D., Acting Chief Horticulturist.

Introduction.

FOR MANY YEARS, South African Oranges have had a reputation of being sour suspects on overseas markets, as well as at home. Trade Commissioners' reports, as well as other sources of official, public and private information have, from time to time, made reference in more or less caustic terms to South Africa's "sour Oranges."

Every Orange-growing country has had some difficulty with this question, but, in most cases, the trouble has arisen from the practice of shipping the fruit early in the season in order to capture a good early market. This difficulty has been overcome by simply legislating against the sale of greenish fruit, and setting a maturity standard for the composition of the juice. This standard has taken the form of requiring that the percentage of total soluble solids (mostly sugars) shall be eight times as large as the percentage of total acids (chiefly citric acid). This is briefly referred to as the 8:1 or sugar-acid ratio.

In California and Florida, the effect of such legislation was simply to retard shipping, as the fruit, in most instances, had no difficulty in reaching the required ratio by remaining on the trees longer.

A peculiar feature of a proportion of South African Oranges is that they do not improve sufficiently, by remaining longer on the trees, to reach such a wide ratio before becoming otherwise over-ripe and dropping from the trees. This applies principally to Seedlings, but also to some extent to other varieties, including Navels.

Export Regulations.

Until 1926, nothing had been done by any regulation to check the export of such sour Oranges from South Africa. In 1925, the only reference to the condition of the juice was that the fruit should be "fully developed, not too ripe or too unripe." The 1926 Regulations, while retaining these words, add that the fruit shall contain an "abundance of well-balanced juice in respect of acids and sugars." This gave an indication of the Department's purpose, but it was not explicit enough nor did it empower the Fruit Inspector to reject otherwise sound but excessively sour fruit. In the drawing up of Fruit Export Regulations, the Minister and his Department are guided by considerations of the welfare of the fruitgrower, of the trade, and of the ultimate consuming public, so that drastic steps cannot hurriedly be taken. By 1927, in order to face the issue squarely, the new Regulations provided, besides the context of 1926, that "unless Oranges will pass a 7:1 ratio of soluble solids to acid test they shall not be exported."

Proportion of Sour to Sweet Oranges.

Owing to limitations of staff and of funds this bold step had been taken without adequate preparation. It resulted in forcing all concerned to a realisation of the exact situation, namely, that certain areas produce an exceptionally large proportion of sour Oranges. The proportion of sour to sweet Oranges in any area depends on where the line of demarcation is drawn between them. If a 17:1 ratio be taken as the criterion of comparison, then between 90 and 95 per cent. of the seedlings grown in two areas of the western Transvaal fall into the sour class. To have enforced the 1927 Regulations would

have thrown many seedling-growers out of business without preparation to dispose of their fruit anywhere. The regulations were, therefore not enforced. The Chief Fruit Inspector was thereupon instructed to undertake to analyse samples from all consignments exported, if possible. His report gives a wealth of valuable information on these tests.

As a result of the general interest aroused by the experiences of the 1927 season, the new regulations for the current season provide more wisely that "No Oranges shall be exported unless . . . they show on test not less than the following ratio of total soluble solids to acid:—

Seedlings: 5.0:1; Valencia and other late varieties: 5.5:1; Navels: 6.0:1."

A measure of discretion is also left in the hands of the Fruit Inspector in cases where these ratios may not be reached, but where the fruit is nevertheless palatable.

What the Department is Doing.

The fruit which barely passes the above ratios is, however, distinctly tart and would unhesitatingly be classed as sour by many sensitive palates. The grower's position may be (a) that he is in the habit of picking his crop too early, and that he can improve its sugar content by leaving it longer on the trees; (b) that his trees are a mixed lot, some of which ripen later than others, in which case he can leave the late-maturing trees to be picked later; or (c) that some or all of his trees are of an inherently sour strain, which will not improve by hanging on the trees longer. In order to assist the grower in determining his exact position Dr. F. J. de Villiers, Research Horticulturist, was deputed to prepare a brief bulletin to explain the "Directions for testing export Oranges for the Sugar-Acid Ratio." Arrangements were also made with a firm of chemical apparatus distributors to supply complete outfits direct to exporters desiring to make their own tests. It is of interest to note here that 84 of these outfits have already been sold. At the end of last season, too, the Minister sanctioned a plan to officially investigate the position in the Koster area at the Department's expense and to this end Dr. de Villiers has been stationed in this area with a staff of six men.

Activities of Government Fruit Inspectors.

Another activity of the Department has been to place Government Fruit Inspectors, provided with testing outfits at inland shipping points. These officers test the fruit being packed and, if necessary, reject for sourness on the spot so as to obviate this being done after transport of the fruit to the coast. In practice, however, rejections have become rare, as growers are encouraged to pick representative samples of fruit from their orchards and to bring these to the inspector to be tested. If they fail to pass the test the crop is left on the trees until a subsequent test has proved them passable. In uniformly fair orchards the anticipated difficulties have vanished. In mixed orchards several pickings may be necessary. When a proportion of the trees bear inherently sour fruit which fails to sweeten up, a portion of the crop will remain unpicked at the end of the season and be excluded from the export trade. This fruit is often very rich in total soluble solids, and fails to pass the ratio only because of an extremely high acid content. It is valuable for the making of Orange squash and fresh Orange drinks since sugar and water may be added ad lib. to dilute and sweeten the juice. It may, therefore, be disposed of locally without difficulty to firms which specialise in these beverages in yearly increasing quantities.

Unusual Situations.

During the current season, some unusual situations have arisen, of which I shall give two instances: one from the eastern and one from the western Transvaal:—

I.—Sour Navels.

Early in June, a very urgent wire was received from the eastern Transvaal to the effect that about 20,000 cases of Navels still failed to reach the regulation ratio of 6:1, and that the local Fruit Inspector consequently refused to pass them for export. It was pointed out that this fruit had always been passed for export in previous years, and that, unlike the situation with seedlings, this contingency with Navels was quite unforeseen. Local markets could not suddenly have absorbed such a surplus with dislocation of prices. Obviously, something had to be done at once. Dr. Pole Evans, Chief of the Division of Botany, Horticulture and Entomology, explained the situation to me and sent me down by the first train to investigate the matter on the spot.

During this visit I elicited the fact that all the trees bearing these sour Navels originated from the same source.

This source was a local orchard, which I shall designate as the "Mother orchard." All of the daughter orchards established from this source consist of trees of similar appearance, bearing fruit of similar color and form, and with an identical sugar:acid ratio. Navel orchards, established in the same locality with trees from other sources, do not show these characteristics. For convenience, I shall designate the latter as "Early Navels" and the former as "Late Navels." The terms "sweet" and "sour" would also be appropriate.

The following table shows the relative approximate number of boxes of these two types picked for export up to June 6 last:—

Table I.

1. Early Navels exported ..	38,000
2. Early Navels rejected . . .	Nil
3. Early Navels still to pick but fit for export. . . .	12,000
4. Late Navels exported . . .	3,300
5. Late Navels rejected . . .	40
6. Late Navels too sour to pick	17 to 20,000

The most striking feature which this table brings out is that the sour Navels are the last, instead of the first, to reach the market. This constitutes another example of a South African reversal of the conditions obtaining in other parts of the world, and it stresses the necessity of making our own investigations instead of depending for guidance, almost entirely, on the scientific work done in other countries.

Tests of the juice made during the season to date gave a very good indication of the relative value of the fruit from the late as compared with that from the early orchard.

The following three tables are given as examples of the quality of Orange juice from typical orchards:—

Table II.

Early Navel Orchard.				
Sugar				
Brix.				
Date	Per	Acid		
Tested. Flavor.	cent.	Per cent.		Ratio.
3/4 Good	8.45	1.4		6.03
16/4 Good	9.93	1.1		9.02
17/4 Good	9.23	1.13		8.18
Average				7.74

Table III.

Late Navel Mother Orchard.

Sugar				
Brix.				
Date	Per	Acid		
Tested. Flavor.	cent.	Per cent.		Ratio.
4/5 Sour	11.2	2.52		4.64 to 1
17/5 Sour	11.2	2.14		5.2 to 1
23/5 Sour	12.9	2.42		5.3 to 1
5/6 Sour	12.4	2.24		5.6 to 1
5/6 Sour	12.4	1.98		6.2 to 1
				(Only passable One.)
Average				5.39

Table IV.

Late Navel Daughter Orchard.

Sugar				
Brix.				
Date	Per	Acid		
Tested. Flavor.	cent.	Per cent.		Ratio.
7/5 Sour	8.82	1.59		5.55 to 1
9/5 Sour	10.4	1.83		5.68 to 1
25/5 Sour	8.5	1.6		5.3 to 1
25/5 Sour	8.9	1.62		5.4 to 1
29/5 Sour	8.5	1.69		5.0 to 1
Average				5.39

In comparing the ratios in these three orchards, several features of interest stand out clearly: (a) The Early Navels are fit to pick early in April, whereas the Late Navels do not come up to the regulation ratio until June; (b) The Early Navels show a rapidly-widening ratio, whereas the Late Navels do not show this rapid rate of change; (c) The Early Navels are so well above the required ratio that there is no fear of their rejection, whereas the Late Navels have great difficulty in coming up to requirements; (d) The early orchard and the late daughter orchard are both composed of young trees.

The total soluble solid content of Oranges from these two orchards differs very little, but the acid-content of the Early Navels is so much lower that the sugar:acid test is passed with ease; (e) The ratio of the mother and of the daughter Late Navel orchards shown here is identical. The average of four similar daughter orchards, including the one shown in Table IV., was actually 5.34:1, which clearly shows the probable hereditary nature of the sugar:acid ratio in strains of Oranges; (f) The higher total soluble solids percentage as well as the higher acid-content in the mother orchard Oranges is most probably due to the greater age of these trees, which are over 20 years old, whereas the daughter orchards are probably less than half that age. The variations

shown in the various tests are probably due to absolute differences between trees which are picked at random for testing.

In reading through the local Fruit Inspector's records of tests made throughout the season on Early Navels, I found that the Brix readings ranged from 9.0 to 11.2 per cent. The highest figure just barely comes up to the lowest figure recorded for the fruit of the Late Navel mother orchard. On the other hand, the acid content ranged from as low as .55 to 1.89 per cent. in the Early Navels. This fruit is no richer than that of the Late Navels. It is its relatively lower acid-content which favours its ratio. In actual fact, it is the Late Navel mother orchard which is richest in total soluble solids (including acid), but this should be credited to its greater age, as it is a well-known fact that Oranges from young trees are often insipid and that they become richer with the advancing age of the tree. The tests just referred to cover the season from April 20 to June 7, and involve over 40,000 cases of fruit.

The point to be decided was whether these Late Navels were fit for export or not. By tasting a series of fresh juices squeezed from different Oranges it was found comparatively easy to place them in their order of merit and to determine their approximate ratio. Even the juice of fruit which barely came up to requirements was distinctly tart, to say the least. In all other respects, however, the fruit was of very good quality.

The Department is sometimes accused of being slow in its decision on account of the "red tape" involved, but in this case representations were made about noon on a Wednesday, and by Saturday morning the whole problem had been investigated, reported upon, a decision made by the Minister, and its terms telegraphed to the growers concerned. No other organisation could have been much speedier. The terms of the decision arrived at were that the whole crop of Late Navels might be exported if it did not sweeten up to the required ratio of 6:1, provided that the cases are distinctly marked "TART" immediately preceding the name Navel.

As a result of this decision a fraction of the copy was shipped under the designation "Tart Navels," but the bulk of it was left on the trees for a longer period, and has since sweetened up sufficiently to pass inspection for export as normal fruit.

II.—Do Oranges Sweeten after Picking?

The problem which arose in the western Transvaal is somewhat different, and it involves a new phase of a very old question, namely: "Does an Orange sweeten up after it is picked?"

It was represented to us, towards the end of June, that certain growers in the western Transvaal resorted to a prolonged period of wilting for

Table V.

Tree	in Ratio at Weekly Intervals.				Increase.
A. (First Pick)	4.85	5.8	6.2	6.6:1	1.75
B. (First Pick)	6.4	6.7	7.1	7.7:1	1.3
B. (Second Pick)	6.7	7.2	8.0	—	1.3
C.	4.8	4.9	4.8	—	0
D.	5.2	5.3	5.2	—	0
E.	6.05	6.15	6.1	—	.05

their seedling Oranges in order to widen their sugar:acid ratio before packing.

In view of the general knowledge extant on this question, the gist of which, is that Oranges do not appreciably change in their total soluble solid content nor in their ratio after picking, it would not have seemed worth while to attach any importance to the report made.

Seedlings, however, are a collection of hybrids from many unknown sources, both local and exotic, and some of them may conceivably possess certain inherent characteristics quite distinct from those of established varieties.

In order to test this theory a simple project was at once outlined and launched, the purpose of which is to determine (a) whether the sugar:acid ratio of seedling Oranges changes during the period of wilting; if so, (b) whether this is due to an increase of sugars or to a decrease in acidity; (c) whether the change is of little or great significance as a means of sweetening up the fruit; and (d) whether a long wilting period can be made an economical practice.

The project consists briefly of picking sufficient fruit from the two reputedly most sour and the two reputedly sweetest trees in the same orchard, with which to make five tests in duplicate at intervals of one week. The last test is, therefore, made after a wilting period of four weeks. Half the fruit is being wilted indoors and half outdoors. In order to determine at the same time whether the behaviour of the fruit in regard to its ratio is constant throughout the picking season, five separate pickings are being made from each tree at intervals of ten days. The first picking was made on June 27, and the last on September 3.

Although this investigation is as yet not half completed, some very significant figures have already been obtained. These figures show that a very definite and quite significant widening of the ratio takes place in the fruit of two trees, whereas practically no change occurs in the fruit of three other trees.

The following table (Table V.) illustrates what has just been said in six extreme examples:—

When the investigation is completed it will be possible to say whether the ratio increase is as great during the process of wilting as it would have been had the fruit remained on the tree. If it is greater, then its recommendation will depend on the measure of shrinkage suffered by the fruit in the course of wilting. It will also become necessary to determine whether a similar change occurs in transit and in cold storage. Evidence seems to point to the fact, however, that two distinct types of seedlings occur, with intermediate types between them. It is, therefore, best not to generalise prematurely.

The fruit tested ranges in its total soluble solids percentage from 13.7 to 16.5; in its acid percentage from 1.86 to 3.44, and in ratio from 4.8:1 to 8.0:1. The average composition of the fruit on each tree is fairly constant and its behaviour seems also fairly uniform over the period studied.

As compared to the sour Navels spoken of above, these seedlings are distinctly richer in their total soluble constituents and consequently also in flavor. For this reason they are somewhat more valuable to squashing factories than the Navels.

These two examples serve to illustrate the varied angles of knowledge which are being made manifest to us and to the fruit-grower through the enforcement of this long contended and much delayed measure for the improvement of South African export Oranges. The experience gained is forcing everybody concerned into a proper appreciation of the meaning of quality, and it will unquestionably cause a steady movement on all sides for the gradual widening of the sugar:acid ratio until no Orange is exported which is not equal, or superior, to the California standards known the world over.

Measures for the Future.

Some of the measures which I consider require to be gradually introduced into our regulations are:—

1. To fix a minimum percentage of total soluble solids (say 8 per cent.), below which no fruit shall be exported.

2. To fix a minimum percentage of total acid (say .75 per cent.) below which no fruit shall be exported.

These two measures will effectively shut out the most insipid fruits. The minimum could be raised in subsequent years to further improve quality.

3. To raise the present total soluble solids:acid ratio (by say 5:1) each year until the ratio reaches the fixed standard of 8:1. This would give Navels four years, Valencias five years, and seedlings six years to reach the ultimate optimum ratio. The option can, of course, be exercised of stopping at any point for several years, but this will simply serve to slow down progress.

4. To allow sour fruit to be exported for sale on its own merits, provided it is suitably labelled.

I would propose that all fruit with a ratio of 5:1 or narrower be labelled "SOUR," and that all fruit with a ratio wider than 5:1 but below the regulation ratio for the variety concerned, be labelled "TART."

If it is welcome for the making of fresh Orange drinks, the sour fruit will find its own markets overseas. If it is not desired for any particular class of trade, the prices obtained for it will be the best possible indication to the grower that it is time to withdraw it from circulation. The amount of fruit in the Tart class will gradually increase as the minimum ratio is widened, and it will also fare according to its own merits.

5. To set standards for the sale of fruit on local markets. The simplest way to accomplish this would perhaps be to urge the sale of good fruit under the designation "Export Quality." All fruit so designated to be packed in standard cases and to be subject to the inspection and stamping of a Government Fruit Inspector as if intended for export. No other fruit to be packed in standard cases on penalty of a fine for breach of the regulations. Culls will thus be known by their containers, and discriminating buyers will be able to obtain high-class fruit at fair prices, leaving "the pig in a poke" to speculators.

The Orange Grower's Outlook.

To the fruitgrower who has sour Oranges, the problem may be gradually solved in a series of stages as follows:—

- (a) Determine whether the trees composing the orchard are uniform in quality or mixed. Uniformly good orchards may be picked whenever it is convenient and expedient to do so.
- (b) If mixed, mark the sour trees for special attention and leave them unpicked. If all the trees bear sour fruit (an unlikely contingency) postpone picking and proceed as follows:—
- (c) Leave the fruit on the trees and re-test fortnightly until sweet enough to pick.
- (d) If they sweeten up by wilting without shrinking too much, pick and wilt before packing.
- (e) If inherently sour and unable to sweeten up by remaining on the trees or by wilting, dispose of the fruit to squash-manufacturers or to users of fresh juice.
- (f) If the number of sour trees is insufficient to warrant a specialised trade, work them over with budwood from heavy bearers of popular sized, sweet, rich fruit, preferably from the same orchard or from trees growing under similar conditions in the neighborhood.
- (g) If all or a large number of trees yield sour fruit and a specialised trade therewith is not found profitable, work them over to a better strain or more suitable variety.
- (h) If for any reason it is not possible or practicable to work over unprofitable trees, then the only remaining alternative is to remove them and replace them by profitable ones.

MELBOURNE ROYAL SHOW.

Prizes for Export Apples.

The Royal Agricultural Society of Victoria, has decided to again include a class in its prize list for Apples suitable for export. This competition was inaugurated last year, and proved both interesting and educational to fruitgrowers. Two cases of each exhibit were forwarded to London at the end of April, and will be judged there, the remaining two cases will be judged at the "Royal" Show in September. The exhibitor obtaining the greatest number of points in both judgments is declared the winner.

Prize money totalling £25 is offered by the Society, and in addition, the Orient Company will present a silver cup to the winner.

INTERSTATE CITRUS-GROWERS' CONFERENCE.

Opening at Melbourne May 7.

Important Items Listed for Discussion.

THE Annual Interstate Conference of Citrus Growers convened by the Victorian Central Citrus Association will be held at Melbourne, commencing May 7.

A large attendance of delegates is anticipated, and many important matters will come up for discussion.

The preliminary agenda includes the following:—

Constitution of V.C.C.A.—That the first matter for discussion at Conference be the reorganisation of the constitution of the V.C.C.A. (Murrabit.)

Fumigation.—That the State Rivers and Water Supply Commission be asked to co-operate with the Agricultural Department in financing the fumigation of all groves when necessary in the opinion of the district orchard supervisor. (Murrabit.)

Spraying Oils.—That the question of reduction of duty on spraying oils which is a direct tax on the grower, be taken up with the Customs Department. (Murrabit.)

Cases.—(a) That Conference press for a reduction in duty on imported shooks. (Murrabit.)

(b) That a uniform case be used for the Australian trade and that uniformity be secured as far as possible in regard to the export case. (Board of Directors.)

Case Labels.—That once a labelled case is used, the label be completely obliterated from the case before it is used again. (Cobram.)

Trees.—That the Superintendent of Horticulture be requested to take steps to have supervision placed on the supply of orchard trees. (Murrabit.)

Levy.—(a) That it be a recommendation to Conference that the Central levy for 1929-30 be on the basis of 2½ per cent. on the gross amount realised for the fruit. (Board of Directors.)

(b) That it be a recommendation to Annual Conference that the case levy should be dropped and that a levy on returns on a percentage basis be substituted. (Nanneella.)

(c) That, in future, the case levy be on a percentage basis. (Red Cliffs.)

(d) That the levy be reduced to threepence a case instead of fivepence. (Mildura.)

(N.B.—V.C.C.A. levy is at present 3d.—Mildura Association levy 2d.)

(e) That half of the levy for fruit

bought by the Railways shall be paid to local branches. (Mildura.)

(f) Compulsory Levy Bill. (Board of Directors.)

Melbourne Market.—(a) Report of Market Representative, Mr. Kitchin-Kerr.

(b) That it be a recommendation to Conference that immediate action be taken with a view to consolidating the position of outside citrus fruit coming from New South Wales into the Melbourne market having primarily in mind the linking up of all packing houses with the V.C.C.A. (Bamawm.)

(c) Farm Produce Agents Act Amendment. (Board of Directors.)

Direct Sales.—That a vigorous attempt be made to stimulate the sale of Oranges in case lots direct to householders. (Nanneella.)

Agents.—(a) Appointment of accredited agents for the coming season. (Board of Directors.)

(b) That the accredited agents of the V.C.C.A. should sell citrus fruits from members of affiliated Associations only. (Nanneella.)

(c) That the agency position in Bendigo be reviewed with a view to either changing the existing agent or increasing the number of agents in Bendigo. (Bamawm.)

Field Organiser.—(a) That steps be taken to appoint a permanent field organiser. (Red Cliffs.)

(b) That the V.C.C.A. appoint a permanent field organiser. (Mildura.)

Export.—(a) That it is advisable to send regular shipments of Oranges to overseas markets, the returns to be pooled until the export is placed on a sound footing, and that the Government be urged to pass regulations for a levy on all citrus fruits marketed in Melbourne, such levy to be used as an insurance fund to ensure Melbourne prices for oversea consignments, the levy to be collected by the Railways Department or other suitable authority. (Nanneella.)

(b) British embargo on use of borax. (Board of Directors.)

(c) Refusal of shipping companies to carry citrus fruits on account of alleged taint to other perishable cargoes. (Board of Directors.)

Co-operative Empire Marketing of Citrus Fruit.—Rhodesian (South Africa) questionnaire. (Board of Directors.)

Importations of Citrus Fruits.—That a prohibitive duty should be placed on imported citrus fruits. (Nanneella.)

Citrus Preservation Experiments. (Board of Directors.)

Pure Fruit Drinks Regulations. (Board of Directors.)

Visit of Scientific Officers to California.—Federal Council minute, January 10.

A supplementary agenda has been issued including resolutions from Murrabit in favor of altering the V.C.C.A. by dividing Victoria into districts according to (1) Geographical position; (2) Soil conditions—e.g. Cobram-Goulburn Valley, Barham-Koondrook-Murrabit, Tresco-Kangaroo Lake-Lake Boga, Swan Hill-Woorinen-Nyah, Mildura-Merbein-Red Cliffs, etc. Each district to have one representative on the Board. The Board to elect its own chairman and to meet at least every three months.

Merbein desires a scientist to collaborate with the Agricultural Department re fumigation.

Factory Supplies.—That no grower shall sell fruits to factories until prices have been fixed by V.C.C.A. in consultation with factory managers (Merbein). That citrus for factory purposes be carried at agricultural produce rates (Mildura).

Merbein also desires a definite method for appointment of agents, and the reduction of duties on Australian citrus entering New Zealand. The Superintendent of Horticulture will speak on "Bud Selection," and the Directors will introduce the subject of "State Nurseries," and "Concentrated Orange Juice."

New South Wales will introduce the subject of "Maturity Standards" for Oranges.

Open Invitation.

Growers, whether officially appointed delegates or not, are cordially invited to attend the Conference and take part in the discussion.

THE USE OF ETHYLENE GAS IN RIPENING FRUIT.

Dr. Franklin Kidd, in his third lecture on "Biology and Refrigeration," delivered before the Royal Society of Arts, London, said that ethylene gas is now used extensively in the citrus packing houses of California to accelerate the ripening of Oranges, which are gathered as soon as a statutory content of sugar and acid is attained, though they may still be green. Early fruit of this sort is needed to extend the marketing season and to avoid excess of supply at the peak period of production.

It has long been known that the change from green to Orange could be hastened by heating the fruit in

poorly ventilated rooms. By using smoking oil stoves, damped down so as to yield products of partial combustion, the change can be further accelerated. This primitive method is now being supplanted by electrical heating and the addition of regulated amounts of ethylene gas to the atmosphere.

According to Chace and Denny, it is not believed that the ethylene enters into any special chemical combination with the green coloring matter of the fruit to form a colorless compound. Their experiments indicate that the ethylene stimulates the fruit to renewed activity, and that as a result of these life activities the fruit itself brings about the decoloration of the green pigment.

It is truly surprising what low concentrations of ethylene are able to cause green fruit to turn yellow. One part by volume of ethylene in one million parts of air was found to color fruit in about the time required by the older kerosene stove method. Even one part in five million produced a satisfactory result, though it required a longer time.

The high temperatures that were formerly thought to be necessary for the coloring process are now known not only to be unnecessary, but positively injurious. Ethylene will color Lemons with sufficient rapidity for commercial purposes when the temperature is 60 deg. F. to 70 deg. F., and will color Oranges at 70 deg. F. to 80 deg. F. It is possible to obtain coloration at lower temperatures if a longer time is allowed.

Ethylene gas in concentrations as low or lower than one in 4,300, greatly accelerates the development of the red pigment in Tomatoes. Other ripening processes, the destruction of starch and of organic acids, and the conversion of insoluble nitrogen to soluble forms are also accentuated.

Similar results are produced by ethylene in the ripening of Bananas. Its use, however, has not yet been very generally adopted in connection with this fruit. The Banana fruit is shipped and handled in the green state and ripened or conditioned after arrival in warm rooms. It is interesting to note, however, that the use of exposed gas jets has been considered by the trade superior to hot-water pipes for the heating of these ripening rooms, and that in the Botanical Laboratories at Cambridge the amazing oligodynamic effects of extremely small traces of ethylene upon the respiration and ripening of fruit was first discovered, owing to an accidental leak of coal gas (which contains ethylene).

STRAWBERRIES GROWN BY ARTIFICIAL LIGHT.

Strawberries, grown and ripened under electric light, proved to be of delicious quality.

The Paris correspondent of "The Times" states that at the weekly meeting of the Academy of Sciences, M. Mangin, the president, submitted for examination a consignment of Strawberries grown under artificial light. The fruit, which was fully ripe and well-colored, had been grown in 40 days under two Tungsten lamps of 1,200 watts each. By maintaining these lamps at a distance of 4 feet from the fruit, and imparting a gyratory movement to them, a light power of 90,000 candles had been developed over an area measuring 4½ square metres. The fruit was declared by members of the Academy to be delicious.

PRUNING FRUIT TREES.

Start With Apricots and Peaches in May.

There is a general opinion that pruning deciduous trees early is risky, it being thought that, if warm wet weather follows, the trees are more liable to shoot when pruned, states the N.S.W. Department of Agriculture. It has to be admitted that experiments carried out by the N.S.W. Department have failed to prove or disprove this contention. However, if the weather be fine during May it is generally more economical in large areas to start pruning, and so get the work well in hand, for bad weather may cause further delays, and pruning then clashes with the other winter work, and often the winter ploughing is postponed to the detriment of the trees, especially in dry seasons.

To make the most economical use of the time available, a start should be made on those deciduous trees, such as Apricots and Peaches, which lose their leaves earliest, and which start growth in the spring first. Those that have not so far used an orchard burner for disposing of prunings, should try it out this season. It is a far cheaper means than carting off.

Where no green manure crop has been sown, the autumn ploughing, if not already carried out, should be completed early this month.

Strawberry Culture is Profitable

May is the Planting Time.

Varieties and Cultural Hints from New South Wales.

AS STRAWBERRY CULTURE is profitable, and as the planting season is now here, we have pleasure in publishing the following information, kindly supplied by Mr. C. G. Savage, Director of Fruit Culture for N.S.W. The notes are by Mr. L. Gallard, one of the fruit inspectors to the N.S.W. Department of Agriculture, as follows:—

OF the side-crops grown by orchardists there is none (providing conditions are favorable) which gives better returns for the amount of time and money expended on it than the Strawberry. That only a small area is required for the cultivation of the crop should add to its popularity—a quarter of an acre of Strawberries well cared for will often yield over £60 in one year. To obtain such a return a good deal of attention is naturally called for, but the work is light and can be performed by women as well (and often better than) men. Thus the thrifty wife and the younger members of the household can often substantially add to the family income.

The first two essentials for the profitable cultivation of Strawberries are:—

- (1) A good water supply; and
- (2) Ready means of access to market; a north-easterly aspect is desirable, and a sandy loam with a clayey subsoil is the soil most suitable, but both of these points are quite secondary in importance compared with water supply. I have seen really good beds of Strawberries even in land with a westerly aspect, though it is wise to pick a slope which will catch as much of the morning sun as possible.

As for soil, if sandy loam is available certainly choose it. Such a soil produces the brightest colored berries, gives the best root service, thus enabling the plants to assimilate all the nutriment put into the land—and is much more easily worked. Black soil will grow plants all right, and in many cases will do with less artificial manure, but it sets down very hard after watering, and is difficult to work, while the berries grown on it are darker than those grown on sandy loam, and lack their lustre.

Newly cleared bush land is preferable if it can be procured—such land does not produce many

weeds, and does not need so much manure—but the prospective grower who cannot procure just the sort of land he wishes need not be discouraged so long as he has the water supply. If his soil is not just suitable, he can loosen it by dressings of stable manure or bush rakings, or strengthen it with fertilisers, provided he has the water to enable him to get the good out of the fertilisers at the right time. Without the water, fertilisers are uncertain in their effect.

Preparation of the Land.

The land should be ploughed or dug up from 8 to 10 inches deep and harrowed down well. A dressing of about 1 ton to the acre of blood and bone (or, better still if available, its equivalent—about 30 tons—of stable manure) should then be spread over the surface and ploughed or dug in. If blood and bone is used a very good plan is to sow the manure in every third furrow, and bury it that way. If an 8-inch furrow is made the fertiliser will be brought immediately beneath where the row of plants will subsequently come. This method buries the manure deeper and reduces the production of weeds.

The working should be done a few weeks before planting time if possible. If the manure has not been worked in previously, and is being applied when planting, care should be taken not to bring it into direct contact with the roots of the plants, as it may produce scalding.

Method of Planting.

Two methods of planting are in vogue—the single and the matted row methods. The single row is the more popular, but some growers contend that the matted row (see Fig. 1) provides more shelter for the berries.

When planting in single rows, the rows should be about 2 feet apart, and the plants set about 10 inches apart in the rows.

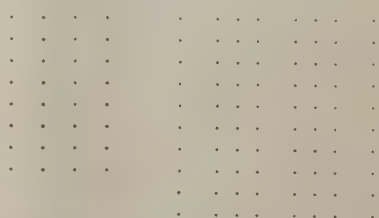


Fig. 1.—The single and matted row methods of planting.

When a matted row is needed, all that is required is either to go through the bed after it has been planted as just stated and plant another row in every second space, or to wait until the runners begin to spread, and leave such new plants as are evenly spaced, between every second pair of rows. When these are well rooted, the runners between the main plants and the new ones may be cut, and the latter allowed to establish themselves.

If a grower determines from the start to have matted rows, the three rows to form the matted one are best planted 10 inches apart, and an extra width of 4 inches allowed for an alley or path row. These measurements allow sufficient room for the pickers and for the cultivator to be run through in off seasons.

The number of plants required for an acre, if planted 2 feet by 1 foot, would be 21,270; if 2 feet by 10 inches,

main crop, but they can be planted up to the end of July, and if the winter is severe this late planting often gives the best results. As a matter of fact, late planting has come into favor during recent years, and is being practised by some of our leading growers, who plant even as late as August.

If a grower has a piece of land upon which he is not likely to have too many weeds, a planting in February will give an extra well established plant for the main crop, and one which, without being injured for the main crop, will meantime carry a few early berries. To obtain such a result, it is necessary to leave the first runners which come out while the second row is maturing, and thus suffer loss in connection with that crop, as only the first runners can be used for this planting. The practice is not very general in the Ryde district (N.S.W.), as growers claim that the

well; its flavor is richer, but its color is rather too dark. The plant carries a very heavy foliage, and is very prolific in runners. Phenomenal is also worth a place in small gardens on account of its flavor, but the berry is too small for commercial purposes.

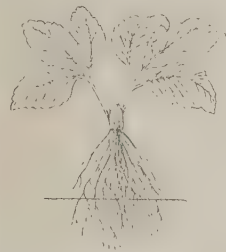


Fig. 3.—The line shows where the roots should be cut off.

For over twenty years one grower in the Lane Cove River district stuck closely to Creswell's Seedling, but for several years past it has shown signs of distress from a trouble which has puzzled biologists, and which is considered by many of the leading growers as "a petering out," caused probably by the plants being grown too long in the same locality. The grower referred to, when he found Creswell's Seedling giving out, turned to Port Macquarie, which is of very early ripening habit. The color is a dark bright red, the fruit being large, conical, with rounded point, and even surface, while the flavor is very rich. It resembles Ettersburg 89 in shape, is larger and brighter in color. The plant is a vigorous grower, and carries a heavy foliage. So far it has produced some very fine first crops, but the second crops have not come up to the standard of Creswell's. The fruit ripens about three weeks earlier than the last mentioned variety, and consequently commands a higher price.

Ettersburg 89 is coming into favor, and as an early variety it comes between Port Marquarie and Improved Malakoff.

Fendalcino, a fairly new variety, is also very early, and the fruit is of fine quality, and although not self-fertile, very good results have been obtained during the last two seasons (1927 and 1928). It is best, however, to plant it in conjunction with another variety which blossoms at the same time. Rhodes Special, which is a good bearer, and produces very fine fruit for kitchen garden purposes

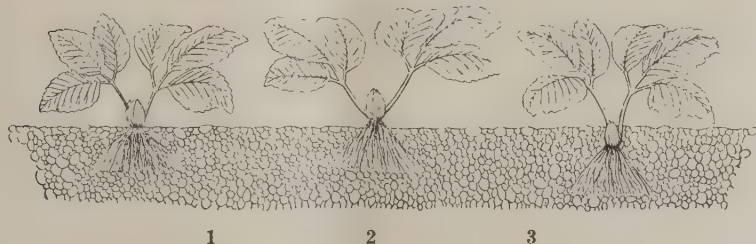


Fig. 2.—No. 1 is correctly planted, No. 2 is too high, and No. 3 too low.

26,136. If matted rows are planted, the number of plants needed will be increased by one-half.

How to Plant.

For planting, choose only good healthy runners with a good root service. If the roots are too long, cut them back to about 3 inches. If the ground is in good tilth, a hole sufficiently large for the plant can be hooked out by hand or with a small scoop; otherwise a small drill can be made. Spread the roots a little when planting, so that the root service may be evenly divided all around the plant, and leave the crown of the plant just above the ground level. When the plants are set, press the soil around them fairly firm. A line should be used when planting, as straight rows not only look well, but are essential if a horse is to be used amongst them or surface irrigation practised.

Time for Planting.

May is the most popular planting time in the district under discussion. Planted in this month, the plants have a chance to get well set ready for the

benefits derived do not compensate for the sacrifice made in other directions.

Varieties to Plant.

In this district Creswell's Seedling has been a favorite for many years on account of its bearing qualities. This variety often yields almost as good a second crop as the first, and, under good conditions, will often yield other fairly good off-crops. At the end of June one bed in North Ryde was yielding a very nice picking. The berries in this variety are bright red, elongate, and often flattened on the sides. Its main fault is that it is a little soft in texture, but in spite of this no other variety has yet been able to displace it.

Glenfield and Melba are two good varieties, and Dr. Moree is also considered a fair one. As an early variety, Improved Malakoff is well worth a place, as it ripens much earlier than Creswell. It throws a heavy main crop, but is not nearly so prolific in the second crop as Cres-

(it is too tender for marketing purposes), is being used for this purpose as it blossoms at the same time. Several growers claim that by adopting this means they have obtained very good results from Fendalcino.

In 1924 the Department of Agriculture introduced an American

variety named Gandy, but it did not do well here. In 1926 they also imported a new English variety named Madam Kooi, which produced some of the finest berries I have seen.

Euresko is another variety which is promising well.

The Commercial Aspect.

The following table gives the returns actually obtained by several growers of Strawberries in the North Ryde and Marsfield districts. The seasons were particularly favorable ones, but the figures will afford some idea of the commercial aspect of Strawberry growing.

Table showing yearly returns from Strawberry plots in North Ryde and Marsfield districts.

Year.	Locality and Area of Plot.	Numbered of Punnets Marketed.	Amount received for Fruit.			Amount received for Runners.			Amount received for Jam Lots.			Total Receipts.			Expenses, excluding owner's labour.			Net Return.		
			£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
1919	North Ryde, ¼-acre (Strawberries only; intense culture).	2,303	110	0	0	11	0	0	—	—	—	121	0	0	25	0	0a	96	9	0
1920	North Ryde, ¾-acre	2,761	147	15	7	b			12	0	0	169	15	7	Not available			—		
									(Manufactured at home and sold.)											
1920	North Ryde, 1-acre (Strawberries only; intense culture).	11,000	500	0	0	20	0	0	—	—	—	520	0	0	200	0	0c	320	0	0
1918	Marsfield, 50 rods (side crop in orchard).	—	54	0	0	7	0	0	(All inferior fruit used at home.)			61	0	0	Not available.			—		
1918	Marsfield, 95 rods (side crop in orchard).d	—	97	0	0	5	0	0				102	0	0				—		

(a) The punnets and manure cost £20 and water £5.

(b) A sum of £10 received for autumn leaves is included in the total, but no allowance is made for 6,000 runners used for planting a new bed.

(c) Including wages paid for extra labor.

(d) This plot was planted in an old vineyard, in which the clay had been brought to the top; the plot had a southerly aspect.

Glasgow as a Market.

30,000,000 Population in Northern Britain, Unaware of Australian production.

Mr. H. M. Ford, Secretary of the Clyde Navigation Trust, Glasgow, Scotland, recently visited Australia, and emphasised the advantages of the port of Glasgow as a port of discharge for Australian produce. Mr. Ford also represented the Corporation of Glasgow and the Chamber of Commerce.

Australia was neglecting the markets in Northern Britain, stated Mr. Ford. Australian Apples, canned fruits, butter and other commodities were practically unknown in the homes of 30,000,000 people of Northern Britain.

The markets from which these people purchased were successfully exploited by foreign competitors trading in Glasgow, Manchester, and Liverpool. The reason for that, Mr. Ford declared, was due to the fact that Australia was the one country in the world which elected to pursue the policy of concentrating the bulk of its exports to Britain to one market—London—leaving the vast field of the north, comprising the greatest industrial population of the world, practically a free gift to its foreign competitors.

Glasgow, said Mr. Ford, was the third largest market in Britain. It was starved of Australian supplies. For that reason there was a wonderful field of expansion there for Australian butter, dried fruits, meat, eggs and canned fruit.

To develop trade supplies must be sent direct, and regularly, to the respective markets. No food commodity with a world-wide competition could stand a burden of from £3 to £7 a ton as represented by the wastage incurred in marketing through London.

Virtually, as far as Britain's industrial masses were concerned, Australian goods were where they were twenty years ago.

FRUIT CASE MATERIAL.

Attractiveness of Softwood.

The Agent-General for Tasmania, Colonel Eccles Snowden, has furnished the Premier, Hon. J. C. McPhee, M.H.A., with a report on the comparative value of fruit consigned in hardwood and pine cases, which makes reference to the New Zealand export methods.

The case-wood used made no difference in carrying quality, according to the report, but on the question of appearance the Tasmanian official

stated: "The attractiveness of the packing of any produce sold on the English market is an undoubted advantage to the producer. The Tasmanian hardwood case, although highly suitable from a carrying point of view, does not present this attractive appearance on arrival here. One reason is its susceptibility to showing wet stains after having come into contact with moisture in the holds of steamers, and also owing to the nature of the timber it does not appear as clean as the white wood box on arrival. The bulk of the fruit received from Tasmania this year in pine cases has been packed "Oregon style," that is to say, similar to the New Zealand pack, and buyers seem to show some slight preference for this type of pack. Some buyers state that they would always be prepared to pay a little higher price for fruit so packed in pine cases, than for fruit of similar variety and quality shipped in hardwood cases. The pine case appears to permit of a tighter pack than does the hardwood box, and it is only reasonable to expect that fruit which has not been subjected to a good deal of shaking during transit, will arrive in a much sounder condition than fruit which has been somewhat slack packed."

Continuing, the report speaks in favor of colored labels for the ends of the boxes.

Apricot Scab or Shot Hole.*

A Synopsis of Three Years' Control Work in the Goulburn Valley.

Spraying with Bordeaux in Autumn and Spring Gives Effective Control.

(By S. Fish, M.Ag.Sc., Plant Research Laboratory, Department of Agriculture, Victoria.)

(With commendable thoroughness the Department of Agriculture, Victoria, has studied one of the most serious problems affecting Apricot culture in the Goulburn Valley, and the results are given hereunder, same being republished from the "Journal of Agriculture." The officer attending to this duty was Mr. S. Fish, M.Ag.Sc. (of the Department's Plant Research Laboratory), whose services have won sincere appreciation among those with whom he has been in close consultation throughout the experiments.

Spraying with Bordeaux in the autumn and in the spring, has given effective control of Apricot scab or shot hole. Growers will find it worth while to study closely the following details.—Editor, "F.W.")

APRICOT SCAB or shot hole is a widespread disease in Victoria.

It affects the twigs, leaves, buds, and fruit. The affected fruit is unfit for marketing in a fresh state, and is quite unsuitable for canning. The disease has become so general in the Goulburn Valley irrigation area that many growers are finding the industry unprofitable.

The fungus causing Apricot scab produces small brown spots on the leaves. Later the diseased areas drop out from the leaves, leaving the characteristic shot hole effect. The disease appears on the fruit as a minute crimson spot which increases in size, and after a time the spot becomes brown in color, and a scabby effect develops. The disease is noticed on the fruit usually about October, particularly after a period of wet or humid weather. On young wood the affected portions appear as depressed oval areas, the bark ruptures, clusters or spores develop, and gum often exudes.

Under conditions favorable for its infection and development, the fungus will even kill the buds, and such conditions may occur during autumn, winter, and spring. These dead black shiny buds between the bud scales hold spores capable of infecting leaves and fruit. The continued activity of the fungus during the winter, when it attacks the dormant buds, suggests a reason for the experimental spray treatments adopted. Actually, for the most part, sprays of different strength were applied at two different periods, firstly, during the trees' dormancy, either during autumn or winter, and again during the early spring at the pink-bud stage, i.e., the early bud swell stage, at which the pink sepals are exposed; also in some instances after the fruit had formed.

Experimental Work During 1926.

Thirteen-year-old Moorpark trees on seedling stocks were used through-

out the work. The 1926 experiments consisted of spraying with Bordeaux mixture and lime sulphur of varying strengths at the dormant period, at the pink-bud stage, and after the fruit had formed. Each treatment was tested on a row of six trees.

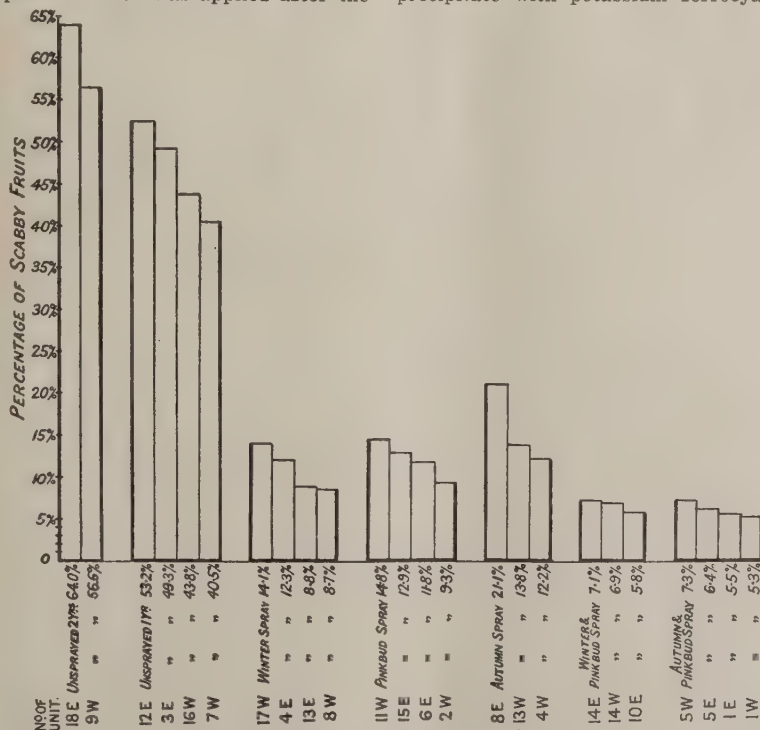
Results.

On unsprayed trees 12 per cent. of the fruit was diseased. Where Bordeaux mixture 6.4.40 and lime casein spreader were applied at the dormant and again at the pink-bud stage, the quantity of diseased fruit was 3 per cent.

Where an additional Bordeaux spray of 6.4.80 was applied after the

fruit had formed, only 1 per cent. was found to be diseased, but 16 per cent. was blemished by the spray. This blemish occurs as a crimson skin blush on the western side of the fruit.

The Bordeaux mixture 6.4.40, plus lime casein spreader, was made up as follows:—12 lb. bluestone was dissolved in 40 gallons of water; 8 lb. of quicklime was slaked slowly, and then added to 40 gallons of water, and the two lots of 40 gallons were poured simultaneously into the vat. A sky-blue-colored Bordeaux mixture resulted, which did not give a brown precipitate with potassium ferrocya-



Graph No. 1 (see next page).

Showing the results obtained in 1927 from Bordeaux mixture 6.4.40, plus 1 lb. of lime casein spreader per 100 gallons of spray, applied at the stages indicated. For details see next page.

*Clasterosporium carpophilum (Lev)
Adert (Corynecum beljericckii Oud.).

nide solution. The spreader was made up into a fine paste, and added to the spray mixture at the rate of 1 lb. per 100 gallons of spray.

Where lime sulphur (20-25 per cent. soluble sulphur) 1-15 was applied at the dormant, and 1-25 at the pink-bud stage, 29 per cent. of scabby fruit occurred. Where an additional spray of lime sulphur 1-40 was given, after the fruit had formed, 30 per cent. fell, and of the remainder there was 57 per cent. of clean fruit, and 43 per cent. that had been blemished by the spray. The ripening of the fruit remaining on the trees was delayed ten days, and even then this fruit was under size. Leaf injury also occurred.

Experimental Work During 1927.

The object of the work for 1927 was to ascertain the value of Bordeaux mixture 6.4.40, plus 1 lb. of lime casein spreader per 100 gallons of spray, when applied at various intervals from late autumn to the pink-bud stage in early spring, i.e., during—

Autumn, before the leaves had fallen (May 19).

Winter, after the leaves had fallen (July 20).

Pink-bud stage (August 15).

Autumn, and again at the pink-bud stage.

Winter, and again at the pink-bud stage.

Unsprayed trees for one year and two years were included as controls.

For this purpose 108 fourteen-year-old trees were divided into 36 units of three trees each, and the various treatments were replicated in different parts of the block. Each unit was harvested completely, and the number of scabby and clean fruits counted.

Results.

Graph No. 1 shows the 1927 results from the unsprayed trees, and from all the sprayed units, other than those in immediate proximity, whether north, south, east, or west, to the units of unsprayed trees. The results obtained from units in the immediate neighborhood have been omitted; this has been done for the reason that these units, whatever their treatment, were uniformly more heavily infected than those situated at some distance from the unsprayed trees. It is reasonable to suppose that, having regard to the nature of the disease, proximity to unsprayed trees constitutes a serious source of infection to which the unprotected foliage and fruit of the sprayed trees are exposed. The foliage and fruit of sprayed trees are not protected, because they develop subsequent to the pink-bud-stage spray.

During 1927, circumstances were such that the winter-sprayed units were all in close proximity to the unsprayed trees. A re-arrangement

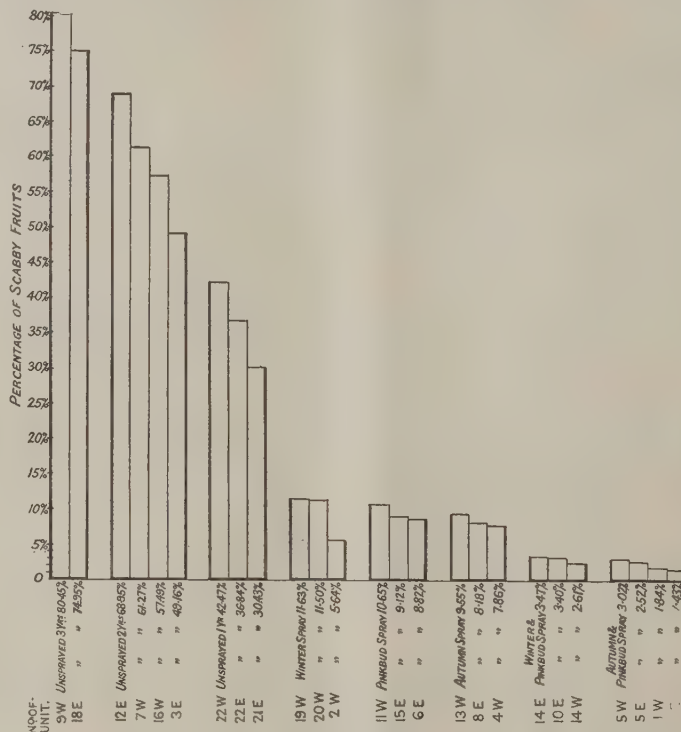
was made for the experiments of the following year. The 1927 results from these units are indicated in graph No. 1. This work showed the Bordeaux mixture 6.4.40, plus 1 lb. lime casein spreader per 100 gallons of spray, applied in the autumn and again at the pink bud stage reduced the percentage of scab in a year favorable to its development from 46.7 per cent. on unsprayed trees to 6.1 per cent.

Experimental Work 1928.

In 1928, the work was continued along the same lines as in 1927. Similar sprays were used, and were ap-

plied at about the same periods. It was necessary to increase the number of units in order to obtain new units of trees unsprayed for one year, and also winter-sprayed units, away from the immediate proximity of the unsprayed trees. The three new winter units, as shown in graph No. 2, had received a pink-bud spray in the previous year. All other units had received similar spraying in 1927 to that given in 1928.

From this work, it can be seen that Bordeaux mixture 6.4.40, plus 1 lb. of lime casein spreader per 100 gallons of spray, applied in the autumn, and again at the pink-bud stage, has reduced the percentage of scab in years very favorable for its development from 36.5 per cent. to 2.2 per cent. in 1928.



Graph No. 2.

Showing the results obtained in 1928 from Bordeaux mixture 6.4.40, plus 1 lb. lime casein spreader per 100 gallons of spray, at the stages indicated.

plied at about the same periods. It was necessary to increase the number of units in order to obtain new units of trees unsprayed for one year, and also winter-sprayed units, away from the immediate proximity of the unsprayed trees. The three new winter units, as shown in graph No. 2, had received a pink-bud spray in the previous year. All other units had received similar spraying in 1927 to that given in 1928.

At picking time, each unit was completely harvested, and the clean and scabby fruit counted. The fruits examined for the obtaining of the 1928 results numbered over 300,000.

Results.

Graph No. 2 shows the results obtained in 1928. Here again no note

The cost of giving one tree two sprayings with Bordeaux mixture and the necessary spreader was 7d. In arriving at this amount allowance was made for the cost of the spray material, labor, use of a horse, and interest and depreciation on the outlay for the pump. Five vats of sprays were used per day. The Apricot trees under test were given two gallons of spray per tree.

It was found that there was no diminution in the yield of the trees that received the treatment outlined above during 1927 and 1928. The average yield per unit in 1928 of the trees that were unsprayed for two years was 5,326 fruits, whereas the average yield per unit of the trees

that received the autumn and pick-bud stage sprays for two years was 6,181 fruits.

Summary.

(1) Thorough spraying in the autumn (as the final leaves were falling) with Bordeaux mixture 6.4.40, to which was added a lime casein spreader at the rate of 1 lb. for every hundred gallons of spray followed by a similar spraying when the trees were at the pink-bud stage, very greatly reduced the percentage of scab. In 1927, the quantity of scabby fruit on unsprayed trees was 46.7 per cent.; on sprayed trees it was only 6.1 per cent. In 1928, the percentage of scabby fruit on unsprayed trees was 36.5 per cent., while on the sprayed trees it was only 2.2 per cent.

(2) On trees unsprayed for three years, 77.7 per cent. of the yield was affected with scab as compared with 2.3 per cent. on trees sprayed with Bordeaux mixture in the autumn and at the pink bud stage in early spring.

(3) The total cost of the treatment was sevenpence per tree.

(4) The spraying during autumn, and again at the pink-bud stage, did not produce spray blenish or depress the yield.

Opportunity is taken to thank Mr. W. Gilchrist, manager of the High School Farm, Shepparton, for the use of the Apricot trees, and for giving all possible assistance in the carrying out of practical work in connection with the experiments; also to Messrs. Pilloud and Nunn, orchard supervisors, who assisted with the counting and examination of the fruits.

PHYLLOXERA MENACE.

Mildura Seeks Unified Interstate Regulations.

The Mildura Vineyards Protection Board has urged the Victorian Government to secure unified regulations in the various vinegrowing States to prevent the spread of phylloxera. The N.S.W. regulations were not so strict as the Victorian, and the districts were separated only by the River Murray.

The Victorian Minister for Agriculture (Mr. Pennington) states the matter will be dealt with at the Ministers' Conference in June.

Mr. G. W. Wickens, Superintendent of Horticulture, in his monthly seasonable notes for May (in the W.A. Journal of Agriculture) writes:—

Pruning will now claim the attention of growers of stone fruits, particularly in the early districts near Perth, where most varieties of Apricots, Plums and Peaches will have shed their foliage. Where varieties of Peaches liable to shed their buds ("Briggs," "Hales," "Downing," "Alexander," etc.), are grown, it is advisable to delay pruning until the buds have burst in early spring.

Spray deciduous orchards for the control of San Jose scale as soon as the leaves have fallen, using commercial lime-sulphur at a strength of one gallon in seven gallons of water, or a reliable brand of spraying oil may be substituted for lime-sulphur, using one gallon of oil in 19 gallons of water. To keep San Jose scale in check it is necessary to spray twice while the trees are dormant: the first to be applied as early as possible after the leaves have fallen, and the second towards the end of winter in late August. As August is often a very wet month, care should be exercised in making the May spraying a very thorough one.

In orchards where citrus brown rot was experienced last season, citrus trees should be sprayed to a height of four to five feet from the ground, together with the land under, and extending for a foot or more outside the spread of the branches. Use Bordeaux at a strength of 4 lbs. bluestone, 4 lbs. freshly-burned lime to 50 gallons of water; or Burgundy at a strength of 4 lbs. bluestone, 6 lbs. washing soda, 50 gallons of water. The trees should not be sprayed all over, or the beneficial fungi which attack lecanium scales will be destroyed, and these pests will increase with great rapidity.

In tests made both by this Department and individual growers, it has been shown that one spraying in April or early May is sometimes sufficient to control the disease for the remainder of the season, but should the season prove favorable for the fungus, the trees should receive a further spraying when signs of infection appear. Later sprayings have the effect of spotting the fruit, but it is better to remove spray spots from sound fruits at time of picking than to have the crop destroyed by disease.

With the advent of wet weather, baiting operations for Fruit Fly are largely ineffective, but trappings in Orange and Lemon groves should be continued throughout the winter months.

New Marketing Arrangements.

THERE is no subject of greater importance to fruitgrowers than that of marketing.

While improvements are being sought for the fruit marketing conditions in Sydney and Melbourne, it is of interest to note what is happening at Perth, in Western Australia.

In response to an inquiry, a letter is to hand from Mr. J. J. Anderson, Secretary of the Metropolitan Market Trust, giving the following details:—

At the present time there is no system of centralised marketing, but with this end in view the Government, in August, 1927, appointed a Trust, comprising J. B. Hawkins (Chairman), G. W. Simpson (Government nominees), C. W. Harper (producers' nominee), T. W. Langley (Perth City Council), and P. J. Mooney (consumers' representative).

The Trust has very wide powers under the Metropolitan Market Act, 1926, and is authorised to establish and maintain a public market and branches thereof for the sale and storage of fruit, vegetable, meat, fish, poultry, eggs, dairy produce, etc.

The Trust has purchased 16½ acres of land within a mile radius of the town hall and adjoining the West Perth Railway Station.

Contracts have been let for the erection of up-to-date markets with shops, garage and refreshment rooms. A railway siding is available if required at a later date, but at the present time motor transport is more economical and satisfactory. Cool storage is available on private premises within ¼ mile of the markets, and space is available on the market site for additional cool storage works if required.

The whole of the market is laid out on the latest lines, roofed with asbestos, concrete platforms and roads. As nearly all the fruit marketed in Perth is sold by auction, auctioneers' platforms take up most of the space. Packers' rooms are provided at the ends of the auctioneers' platforms for convenience and

economy in handling. All the markets are under one roof and there is direct access from one market to another.

It is expected that the markets will be in full operation on June 1, 1929.

The details required by you are summarised hereunder:—

Location.—In the City of Perth, adjoining the West Perth station, and facing Wellington-street, the markets are within one mile of the town hall, and a subway gives communication with the north side of the line.

Area.—Total area available, 16½ acres. Area proposed to be used for first section—6 acres.

Days Open, and Hours.—

Auctioneers' Sales—Fruit.—Daily, 9.30 a.m., but main days are Monday, Wednesday, and Friday. **Vegetables.**—7 a.m. on Monday, Wednesday, and Friday.

Private Treaty.—Daily, 7.30 a.m. to 5 p.m., except Saturday, 1 p.m.

Provision is also made for growers to sell their produce direct to the consumers in the Private Treaty Market (100 stalls).

Statistics.—Special figures for market are not available, but it is estimated that over one million cases of fruit are sold annually.

The value of fruit production for the State for the last statistical year was \$611,222, and from vineyards \$80,823, totalling \$692,045. Of this amount £328,390 was exported, leaving £363,655 marketed in the State.

Imported fruit, principally Bananas valued \$27,710 was also sold making a net total of £391,365. Nearly all this fruit was marketed in Perth or through Perth agents.

Finances.—The Trust is a corporate body, and controls the markets on behalf of the State. The estimated total capital cost to opening of markets including purchase of site is £170,000.

The Trust hopes to be able to pay interest, sinking fund and operating expenses from the rents received. The charge for space other than frontages is £11 per 100 sq. ft. per annum. Leases are for three years, with option of renewal for a further three years at a rental to be fixed.

Administration.—The administration is in the hands of a Trust of five (5), who meet weekly, and the Executive Control is carried on by the Secretary of the Trust.

No attempt is made to interfere with lessees in the conduct of their business, but certain safeguards are provided in the by-laws of the Trust, which protect both the producers and the auctioneer.

In particular—auctioneers must keep full records of their sales, showing clearly the buyer and seller. A dissatisfied grower can complain to the Trust, and the Secretary of the Trust has power to inspect auctioneers' books and report. This guarantees to growers that they receive the full purchase price, less commission, cartage, etc.

The usual charges are 7½ per cent. on fruit, although one firm only charges 5 per cent. The largest firm also grants a bonus to growers out of profits, according to the value of their consignments.

CITRUS NOTES.

It is pleasing to know that Mr. A. C. R. Loaring, of Bickley, W.A., Secretary of the Western Australian Citrus-growers' Association, is now recovering after his recent illness.

Writing under date April 16, Mr. Loaring speaks well of the activities of the Citrus Association at Lower Chittering.

"Last year," continues Mr. Loaring, "was a wonderfully good year for the growers in this State. The crop was fair, and prices were good throughout; it is only when bad times come that the growers want to do something. It seems a pity that such is the case, as it is much better to organise when things are good.

"This year the crop generally is light; in fact, in some districts, I am told, there are practically no Oranges. In this district (that is, the Hills), the crop is very fair. As you know, we—that is, W.A.—have had a wonderful crop of Apples, and prices have been good. I understand, S.A. and Victoria are short this year.

"This last year our Lemon market has been good; this, I think, is partly due to the fact that firms are purchasing largely for essences and cordials, taking practically all the large Lemons off the market.

"The new Government markets are nearing completion, and we anticipate moving into these very shortly. All fruit and produce will then be sold in the one area.

IT RHYMED ALL RIGHT.

"Be sure," said Smifkins, "to look up my friend, Mr. Lummack, while in the city."

"Mr. Lummack," asked his friend, abstractedly.

"Yes, Mr. Lummack. You can remember his name because it rhymes with stomach."

A few weeks later his friend returned and encountered Smifkins on the street. "Do you know," he said. "I tried and tried, but never could find your friend, Mr. Kelly."

N.Z. Export Control Defeated.

Control Ceased for One Month, then Resumed.

A Legal Difficulty.

The New Zealand Export Control Board was recently defeated on an action brought by J. Redpath & Sons, Christchurch, New Zealand.

The Full Court heard the case and decided in the favor of the plaintiffs, Messrs. Redpaths, on March 13.

According to the "Orchardist of New Zealand," the official organ of the Export Control Board, Messrs. Redpaths applied for permission to despatch 30,000 cases of Apples to Hamburg. The Board deemed this sale to be against the interests of the growers, and refused the request. Messrs. Redpaths then contested the validity of the Board's powers, and won the case, with costs against the Board. The court held that the Control Board had not fulfilled all its legal requirements. In addition to advertising control notifications in the local newspapers the Act requires that the Board should also advertise in the "Government Gazette." Advertising in the "Gazette" was omitted by the Board, and as 30 days were required before notification could appear, the Board, in that 30 days, had no legal control powers whatever.

The Board issued an appeal to growers to remain loyal and fulfil their moral obligations, at the same time making full provision for re-assuming control at the end of the 30 days.

In all references to the control system, the Board speaks of "limited" control, in view of the fact that the Otago district has decided by vote not to be included under the control system.

EXPORT ITEMS.

Growers fell behind with their bookings. Growers contracts, up to March 15, were 188,000 cases for the United Kingdom only. The Control Board arranged for shipping space for 144,000 cases, and the space actually filled amounted to 100,000 cases.

In the 1928 fruit export shipping season, New Zealand exported 1,019,137 cases, of which 561,663 went to London, 169,108 to Southampton, 87,304 to South America, 48,825 to Hull, 47,971 to Glasgow, 45,516 to Liverpool, 25,892 to Manchester, 21,937 to Avonmouth, 10,921 to Canada.

Co-Operation Aids the Fruit Industry.

The California Fruit Exchange is an Outstanding Success.

Foundations Securely Laid and Difficulties Patiently Overcome. ∴ Stabilising the Industry.

(By R. E. Boardman, A.F.I.A., F.A.I.S.)

Republished from "The Hobart Mercury"

ORGANISATION in the fruit industry has greatly benefited growers in the United States. It was my privilege to see the orchards and talk with the growers, to see the local organisations at work, and subsequently to witness the fruit being marketed in the big cities of the Pacific coast, also in Chicago and New York.

Later I attended the sales at London, Hull, Liverpool and Manchester, and saw the fruit being marketed there.

One of the outstanding successes in organisation is the California Fruit Exchange, which handles only deciduous fruits (and which must always be distinguished from the Californian Fruitgrowers' Exchange, another successful organisation, but which handles only citrus fruits).

With 26 years' of splendid service to its credit, the California Fruit Exchange may surely be said to be well established, especially as it is steadily growing every year, winning ever increasing praise from its members, and from the wholesale and retail trade with which the Exchange always co-operates.

Commencing in 1921 the Exchange then handled growers' fruit to the value of £40,000, while at the close of the fruit season in 1926 the gross sales totalled £3,500,000. In the last-mentioned period the Exchange also refunded to growers the sum of £120,000 in commission saved, and £25,000 in claims collected.

The story of the success of this organisation is surely one of great encouragement to fruitgrowers—and business men, too—for the industry has been stabilised to the benefit of the whole State. The Exchange now has a revolving reserve fund of £350,000—particulars of which will be given later as it reveals one of the most interesting methods of finance so far devised.

History of the Exchange.

Fruitgrowing in California commenced with the gold rush in 1849. As the years went by, and as local markets were over-supplied, growers began to send their fruit to eastern U.S. markets, necessitating the use of "refrigerator cars" or iced railway waggons. This was in reality an "export" trade from California, the markets being 3,000 miles distant, the iced railway waggons being as necessary to California as shipping space is to Tasmania in sending fruit to the mainland or oversea markets.

Certain abuses crept into the refrigerator car operations in California, a virtual monopoly of the space being obtained by Eastern U.S. salesmen.

Then the growers tried to form a State-wide organisation, known as the California Fruit Union, every grower in the State being invited to take up shares on the basis of one share per acre of fruit grown. The scheme broke down after two years, and its failure delayed the formation of the correct type of organisation for nearly fifteen years, during which time California went through the worst stage in its history of fruit production.

Yet out of the mire of misunderstanding and mortgages there has come the sound edifice of strong organisation, its foundation firm on the rock of sound finance, and its superstructure built by goodwill and business ability. California has learned her lesson.

Instead of a State-wide organisation with individuals as units, the growers have organised into groups accord-

ing to the fruits grown or according to convenient localities, each group (or local association) attending to its own finance and local business, yet linking up with the other groups (or local associations) in forming the central Exchange, which is governed by directors appointed by delegates from the local centres.

In 1900 a committee of fifteen was elected at the State Convention to report on the formation of a "permanent organisation," and in 1901 the California Fresh Fruit Exchange was launched, having local associations as unit members.

After six years of patient and successful effort the business grew to the handling of £115,000 annually, and as finance was necessary to manage the growing trade, the association, on the advice of its bankers, became re-organised and incorporated as the California Fruit Exchange, with a nominal capital of £20,000, having 1,000 shares of £20 each, no grower being permitted to hold more than two shares. This modest financial stability permitted banking facilities and business credit, but meanwhile the developing Exchange was

creating its own reserves,

which have since become paramount. This financial system of providing a "withholding account" or "revolving fund" has now been widely adopted in similar organisations, and, as it is fundamental, it is worth considering in detail.

The Financial Structure.

By having high quality standardised packs, made possible because of the growers being grouped into convenient local organisations, the Exchange handles a large volume of trade at top market prices, and at a minimum of expense. The current charge by commercial private enterprise houses for similar work is 7 per cent. of the gross sales, but the Exchange is able to do the work for 3 per cent. The growers, however, are charged the full 7 per cent., and the balance of 4 per cent. is placed to the growers' credit and paid over a period of five years.

The fund thus created is termed the "withholdings account," and is in reality the working capital of the Exchange, and forms the basis not only of the money advanced to grower members for materials, supplies, labor, buildings, equipment, etc., but it is also used for establishing credit with the banks for seasonable requirements.

At the close of the 1926 fruit season this "withholdings account" stood at £350,000. This fund is constantly revolving so that a grower who has been a member of the Exchange for five years receives a refund of approximately 4 per cent. on his gross sales annually.

Joining in, say, 1921, and with gross sales amounting to £3,000, a grower would be charged the current overriding fee of 7 per cent., but as the working costs are only 3 per cent. he would be credited with £120—being 4 per cent. on his gross sales, this sum being payable over five years. Then in 1922 with gross sales totalling, say, £2,500, he would be credited with 4 per cent. (or £100), and would be paid one-fifth of the 1921 credit (or £24). In 1923, with gross sales of £2,500, he would be credited with another £100, but would receive the second

instalment of the 1921 credit (£24) plus one-fifth of the 1922 credit (£20), or a total of £44, and so on. Here is the system set out in tabular form:—

Rebate (one-fifth payable each year).

Year.	Gross 4 per cent.		1923	1924	1925	1926	1927
	Sales.	Rebate.					
	£	£	£	£	£	£	£
1921	3,000	120	24	24	24	24	—
1922	2,500	100	20	20	20	20	20
1923	2,500	100	—	20	20	20	20
1924	3,000	120	—	—	24	24	24
1925	2,500	100	—	—	—	20	20
1926	2,500	100	—	—	—	—	20
1927	3,000	120	—	—	—	—	—
			£44	£64	£88	£108	£104

And in addition, the amount to his credit would be £328.

It will thus be seen that from the fifth year onwards the grower will receive (depending on his gross sales) a dividend of over £100 annually.

The Exchange To-day.

The California Fruit Exchange to-day has a membership of 7,000 growers, and operates in every district from the northernmost county to the most southern one, a thousand miles away.

There are 165 local associations and so-called "contract shippers"; the latter are growers who have sufficient tonnage to operate as an association. Each association elects its own board of directors, and selects its own man-

ager and packing-house employees. In all matters relative to local management it has absolute and complete control. The primary functions of the local associations are to assemble, grade, pack, and load the fruit. It is then turned over to the Exchange for distribution and sale. Sales are made only to the wholesale trade.

The local associations do their own financing as far as possible. The Exchange will, however, assist individual associations with finance at the current rate of interest for seasonal requirements, furnishing, in addition, case material, paper, nails, and other supplies.

The associations comprising the Exchange either own or are well on their way to owning, their packing-houses and equipment—all paid for out of house earnings or house savings (for the associations deal in growers' supplies) and from refunds paid by the central Exchange.

The standardisation department of the Exchange works with local associations in improving the standard and quality of the packs, thus establishing a splendid reputation for their over-riding "Blue Anchor" brand, as well as for the individual brands of the local associations. The Exchange owns its own timber areas, sawmills, etc., representing an investment of \$250,000. This enterprise stands on its own finance, and is profitable.

After 28 years of valued service the Exchange concludes a statements to its members thus:—

"The primary purpose and reason for the existence of the California Fruit Exchange is to secure for its members the advantages which come from co-operative action under efficient management. Co-operation is only a success when it pays in hard cash, and not the least factor in this ultimate success is devotion and loyalty to the organisation on the part of its members."

MARKETING AUSTRALIAN PRODUCE IN ENGLAND.

Expert says Northern Markets Neglected.

AFTER two years residence in Australia, representing the London & N.E. Railway Co., Major H. S. Cole has returned to England by s.s. "Demosthenes."

All interested in Australia's export trade, hope to see Major Cole back here again in the near future, as he showed great diligence in studying our problems, and has made constructive suggestions of value.

His idea for displaying Australian produce by special cars attached to the train conveying the recent Scottish delegation was instrumental in giving Australia much favorable publicity.

Apple Export from N.S.W.

Major Cole visited Batlow, N.S.W., a few weeks prior to his departure, to inspect the packing of some experimental consignments of fruit for England.

Details of the shipments are as follows:—

Per s.s. "Largs Bay."

50 ½ bus. cases Jonathan Apples, fruit enclosed in ordinary sulphide wraps; 50 do., using oil wraps; 25 Australian bus. cases, Jonathans using sulphide wraps, and 25 do., in oil wraps; 25 Canadian cases Jonathans, sulphide wraps, and 25 do., in oil wraps.

Per s.s. "Moreton Bay."

25 Canadian bus. cases, Granny Smith (oil wraps), and 25 Australian bus. cases, Granny's (oil wraps); 40

½ bus. Granny's, in oil wraps, and 10 do., in ordinary wraps.

It will be observed that an experiment has been made in forwarding Apples in half-bushel cases, which was decided upon as a result of a report of the Imperial Economic Committee.

"Through the courtesy of the Minister for Agriculture," writes Major Cole, "I visited Batlow with Mr. Savage, Director of Culture, and Mr. Broadfoot, Special Fruit Instructor, to watch the packing of the fruit intended for Hull.

"As you are aware, I have continually laid stress on the advisability of Australian increasing her shipments of Apples direct to the north of England, and in particular to Hull, and have also pointed out that Granny Smith Apples are one of the most popular Apples in the north of England, and for some years now appear to always fetch good prices, hence you will observe that Granny Smith's have been included along with the Jonathan Apples in the shipment made.

"There is too much concentration of Australian produce on London. Of American Apples, the northern markets receive three-fourths, London receiving the remainder. Do you suppose that America would continue this system if it did not pay to do so."



Experimental shipment of Apples from Batlow for England.

Top (left to right)—F. C. Johnstone, packer; C. Buchele, grower; H. Broadfoot, Fruit Instructor; H. V. Smith, manager Batlow Co-op.; C. G. Savage, Director Fruit Culture; E. G. S. Clout, Fruit Inspector.

Lower picture—Orchard of Mr. C. Buchele.

Editorial Chats



EDITORIAL.

Once again the benefit of research work has been demonstrated. For many years growers of Apricots have been sorely puzzled by Apricot scab or shot-hole. An officer of the Victorian Department of Agriculture was detailed to investigate the problem. After three years' work the officer concerned, Mr. S. Fish, M.Ag.Sc., is able to present a complete report, as published elsewhere in this issue.

Summarised, Apricot shot-hole can be controlled with two sprayings. Many growers were dubious at the commencement of the investigation, but all are now convinced that the work is completed, and Mr. Fish has been warmly commended. All through his investigation (in which he visited the Goulburn Valley sixty times), he has had cordial co-operation of the growers.

This is good work, and we add our congratulations.

* * *

There yet remain those troublesome problems, transit rot and brown rot, and the hope is expressed that these diseases will be similarly investigated.

"FRUIT WORLD ANNUAL."

Article by Mr. Fred. Charlick.

The "Fruit World Annual," which contains much interesting information for all interested in the fruit industry, includes an article on "South Australian Marketing Conditions."

This information was courteously supplied by Mr. Fred. Charlick, of Adelaide, who has, throughout his career, taken a practical interest in the welfare of the man on the land.

PERSONAL.

John W. White, O.B.E.—Hearty congratulations to Mr. John W. White, whose appointment to the Order of the British Empire was recently announced in the New Years Honors List.

Mr. John W. White is an executive of the White Service, fruitbrokers, which is a world-wide organisation.

PERSONAL.

Mr. G. J. Evatt, Irrigation Commissioner, Leeton, Murrumbidgee Irrigation areas, leaves for England immediately to assist in the disposal of the canned fruit pack.

Answer to Correspondent.

"New Zealander," Tasman, N.Z., writes:—We should be greatly obliged if you could inform us as to the:—

(1) Price paid to growers by the canning factories in Victoria and Tasmania for William Pears.

(2) The minimum size of fruit accepted; and

(3) Whether factories supply the use of cases.

* * *

Reply.

A grower of canning fruit in the Goulburn Valley replies as follows, under date March 23:—

At the moment, we are unable to give accurate information concerning question 1. The position is that growers have delivered fruit, excepting Pears, and do not know what they are to get; £5 per ton has been stated as a minimum. The position is unsatisfactory.

Question 2 is also difficult to answer. The Co-operative Canneries started at 1½ in. Apricots, 2½ in. Peaches, and 3½ in. Pears; they subsequently reduced Pears to 2¼ in. Proprietary canneries started 1½ in. Apricots, 2½ in. Peaches and Pears. Pears were later reduced to 2¼ in. All reductions in size were due to the inability to get adequate supplies of Pears.

Question 3.—Shepparton supplies lug boxes and Rosella and A.J.C. have in some instances provided keros. Other canneries do not supply. Re Pears, the price paid by all canneries is equal to £10 at sender's end of delivery—that is, if you forward by rail you get £10, plus freight, and if you delivery direct to cannery £10 is the inclusive price.

Experiment Stations are operating successfully in Queensland. The one in the north is particularly suitable for the culture of Bananas and other tropical fruits.

CANNED FRUIT INDUSTRY.

A Goulburn Valley grower writes:—

"In connection with the report of the Development and Migration Commission relative to the canned fruit industry, growers at Ardmona state that many of the recommendations are sound, and valuable, but an equitable basis has to be devised for the amalgamation of the Shepparton, Ardmona and Kyabram factories on sound lines.

"It is believed that such an amalgamation would be welcomed, but there are many points that require to be very carefully worked out. The whole question is wrapped up in being able to market the surplus production without loss.

"This surplus production is largely due to soldier settlements, the full effect of which was felt in Ardmona last year, and will be felt in Shepparton in the next two years, when the Lemnos orchards, near Shepparton, reach full bearing stage."

OBITUARY.

NOTED PIONEER IRRIGATION FRUITGROWER PASSES.

Mr. Philip Pullar, Late of Ardmona.

Great regret has been expressed on all sides at the death of Mr. Philip Pullar, previously of Ardmona, Victoria.

Mr. Pullar died at his home at Toorak on April 11, at the age of 67 years.

The late Mr. Pullar was a familiar figure in the fruitgrowing industry, particularly in regard to irrigation. Large areas were developed at Ardmona under his guidance.

A man of vigorous personality, and far seeing, he was prominent in local and national affairs affecting the welfare of the industry. When Chairman of the Victorian Fruitgrowers' Central Association Conference some years ago, the late Mr. Pullar conducted affairs with conspicuous ability.

With his kindly and genial disposition, the late Mr. Pullar was greatly beloved. He had a keen sense of humor, while his sterling and upright character won for him the respect of all with whom he came into contact.

The late Mr. Pullar leaves a widow, three daughters and one son.



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Japanese Plums

Apple, Ballena, Burbank, Kelsey,
Delaware, October, Purple, Santa
Rosa, Satsuma, Wickson, Wilson.



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PICNIC POINT NURSERIES
BAIRNSDALE
VICTORIA

Planting Fruit Trees.

Helpful Seasonable Notes.

AS the seasonal time is rapidly approaching for planting fruit trees, the following hints, from the N.S.W. Department of Agriculture, will be found helpful:—

Headlands.

Headlands of at least 30 feet should be allowed between the fence and the first row of fruit trees to allow the easy turning of horse teams. Where land is very scarce and valuable, this distance is often reduced, but one must then put up with an awkward turn and loss of time when working horse implements.

If a breakwind is to be planted, it should be at least 66 feet away from the first row of fruit trees. Where possible, a wide belt of natural timber should be left for this purpose.

If some of our coastal districts where citrus fruits are grown and soiling is resorted to, wide headlands are not only left around the boundary of the orchard, but an extra width of 10 feet or more is left along the surface-retaining drains. This divides the orchard into rather small blocks, and later the headlands bordering each block provide soil within easy carting distance for re-soiling.

On slopes that will wash easily, it is often the practice only to plough or cultivate across the hill, and not up and down. For this reason, great care should be taken in setting the direction of the rows. The direction they take should be such that it will give sufficient fall or grade to allow water which might collect in any depression to be carried away in the plough or cultivator furrows to a surface drain.

If the fall of the line of trees is too slight, then the water will not carry through these depressions, but collect in them, and at last overflow and wash quantities of loose soil down the hill.

In some places it is impossible to avoid the water collecting in some of the greater depressions, and in such cases washaways will have to be prevented by securely fastening logs or stones across the depressions in line with the trees, where they will be least in the way of cultivation, and allow the water to escape down the hill in its natural course until it meets a surface drain.

Where the subsoil is such as permits of surface drains running down the hill in the lower depressions, the

rows on one side of the drain might often be set at a different angle from those on the other side, in order to get the correct grade of the line of trees; but this change in direction need not prevent working right through with the plough or cultivator, provided the end trees along the drain coincide and the drain is so constructed as to allow implements to cross same.

Planting.

If the soil is in good moist condition, the present month is a good time for planting deciduous trees and Grape vines. Planting, however, should not be attempted if the soil is very wet, especially in heavy soils, or if the soil is in a very dry condition.

Before planting the trees all damaged roots should be cut back to sound tissue.

When carrying the trees to the places at which they are to be planted, the roots should be kept covered with a damp bag, so that they will not become dried by the sun or wind. The centre of the hole should be kept high, which facilitates the spreading of the roots and gives them a downward tendency.

In filling, use moist, fine surface soil, which will work in around the roots; this should be well pressed down with the foot, so that it may come in close contact with the roots.

When all the trees are planted they should be cut well back, starting the head or crown of the trees from 15 to 18 inches from the ground. A great proportion of the roots which have supported the top of the tree the previous season in the nursery has been lost in transplanting; moreover, what are left take some time to become established, and consequently the tree

will start far more vigorously if cut back heavily at planting, and generally will outgrow a tree which is not so treated.

PREPARE FOR PLANTING FRUIT TREES.

Citrus Trees May be Planted in Frost-free Areas.

PREPARATION of the land for planting of fruit trees should be painstaking and thorough, states the N.S.W. Department of Agriculture. Ploughing must be to a sufficient depth, sufficiency depending upon the nature and depth of the soil and the nature of the subsoil.

The soil should be thoroughly broken up, and allowed to remain in the rough, so that, exposed to the beneficial influences of sun, rain, air, and frost, it may be sweetened and improved in its chemical content, and so that it may absorb and hold the winter rains. Later, as a result of the influences referred to, it will respond to the orchardist's efforts, to induce a good tilth.

In localities where autumn is mild and frosts during that season are unknown, citrus trees may be planted during the month of April. Injury to roots and the drying of the roots during the process of planting should be avoided.

It will be necessary to water newly-planted trees in dry soil, thus helping them over the critical period of establishment in their new position. Loss of soil moisture is lessened by the beneficial process of mulching.

Do not place undecomposed manure in contact with the roots. Manure, if used at the time of planting, should be thoroughly mixed with the soil. When refills are being planted, a large hole should be dug and filled with fresh soil.

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NUT CULTURE

Australia Imports Nuts Which Should Be Grown Here.

Hints for Walnut and Almond Growing.

(By J. M. Ward, Superintendent of Horticulture, Victoria.)

NUT CULTURE is a subject that has been sadly neglected not only in Victoria, but the whole of the Commonwealth. As a proof of this—so far as it relates to Victoria—I shall quote the following figures:—

Almonds.—The average production of Almonds in Victoria during the past five years has been only 33 tons per annum. During the same period an average of 30 tons each year has been obtained from the other States, and 22 tons per annum from oversea countries.

In addition to this, some 350 tons of shelled Almonds—that is, the kernels only—have been imported into Victoria from outside Australia. There is a duty of 6d. per lb. on all imported shelled nuts.

A glance at the value of the Almonds consumed in Victoria will probably surprise many. The annual value of those produced in Victoria during the past five years was £2,500. Those obtained from other States, £2,437 per annum; and those obtained from oversea countries are valued at £56,632 per annum, over the last five years.

Walnuts.—The import figures for Walnuts are even greater than those of Almonds. Our production per annum of Walnuts over the same period as already mentioned (5 years) was approximately only 17 tons, valued at £1,890, whilst the annual imports of Walnuts into Victoria during the

same period was some 380 tons, valued at £63,766. Thus it will be seen that only some £4,390 worth of Walnuts and Almonds are annually produced in Victoria, whilst the requirements of these two varieties of nuts in this State are valued at £124,788 per annum.

In addition to these, other nuts are used in considerable quantities, such as **Peanuts, Brazil Nuts and Filberts.** It can therefore be seen by the figures quoted that nut culture in Victoria is one that is more than worthy of serious consideration; particularly in view of the fact that with the varied climatic and soil conditions that exist here, we are in the fortunate position of being able to produce a considerable variety of nuts.

Many growers look upon nut culture as less than a side line, whereas it should be given quite as much attention as, say, the production of dried vine fruits, Apples, Peaches, or any other main fruit crop.

Needless to state, the subject of nut culture requires intelligent attention in the selection of site, locality and soil, as well as great care in future operations, and particularly in the harvesting and marketing of the nuts.

Walnut Culture.

The Walnut must have a really good, rich and well drained soil; alluvial river flats that are naturally well drained are particularly suitable.

If Walnut trees are planted in the northern irrigation areas, care must be taken to see that they are not planted upon salty soils. From observations made, Walnut authorities in other parts of the world, particularly California, it appears that the Walnut tree is the most sensitive to alkali injury.

It does well in either a hot or a temperate climate. This is instanced by the large number of Walnut groves in the hot districts of Southern California, and the trees doing so well in various parts of Southern Victoria and Tasmania.

The mistaken policy of raising Walnuts from seed is becoming increasingly apparent by the fact that seedlings from exceptionally good bearing trees have varied too greatly from the parent type to be of commercial value.

Trees grown from the seed rarely bear nuts similar to the parent, in form, size, thinness of shell, or plumpness of kernel, and still more rarely do they produce the desired productivity of the parent or other important characteristics that determine the commercial value of the tree.

It is now recognised throughout the Walnut-growing world that growers must rely upon the

budded or grafted trees if success is to be attained.

The demand of planters of Walnut trees in Australia, through lack of knowledge of the subject, has been responsible for many trees of unknown parentage being planted; these trees, upon coming into bearing, usually prove to be unprofitable.

Success cannot be expected if ungrafted seedling Walnut trees are planted. The stock mostly used in the past for budding and grafting is

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the black Walnut (*Juglans nigra*); although, in California during the past 20 years, the stock for Walnuts has been narrowed down to the Northern California black Walnut (*Juglans Hindsii*). It appears that this species of black Walnut will apparently withstand more unfavorable soil and climatic conditions than the English Walnut. It also appears to be fairly resistant to the root rot fungus (*Armillaria mellea*).

The reason why reference is made to California is on account of that State having something like 100,000 acres of Walnuts under cultivation, from which some 2,250 tons of Walnuts are annually produced.

Great care should be taken in harvesting the nuts. These should be carefully gathered and dried or cured, upon trays exposed to the sun and wind. They should not be exposed to showers, fog, or even heavy dews. The alternate wetting and drying is harmful. Many Californian growers are curing their Walnuts in dehydrators.

Hints About Almonds.

The same remarks made with reference to the harvesting of Walnuts apply even to a greater extent to the Almond. A discolored Almond shell is reduced in value. The imported Almonds are bleached, resulting in the shell having a nice clean appearance. The Almond in California is bleached by the Almond Associations, as they have special machinery for this purpose. They are thus able to produce a uniformly bleached product. Their method in general consists of subjecting the Almonds to a low steam pressure for 10 to 20 minutes

in order to moisten the shell. They are then exposed to sulphur fumes for 10 to 30 minutes. One to three pounds of the best grade of flowers of sulphur is necessary to bleach one ton of Almonds.

The Almond has been worked upon a number of different kinds of stock, such as the Peach, Apricot, Plum and the Almond. Generally speaking, however, it appears to do best upon its own stock. It requires, however, a soil even in texture and moisture. Where the soil varies in depth and character, the Peach stock can be recommended.

The Apricot and the Plum are most unsuitable as a stock for Almonds. A suggestion that is well worth considering, in the Goulburn Valley, for instance, is the working over to the Almond of a number of unsuitable Peach trees. A few growers may be tempted to do this with probably satisfactory results to themselves. The trees should be cut down and Almond buds worked on to the new growth.

I would like to impress upon the would-be planter of Almonds and Walnuts that he should grow only good commercial kinds.

Plant with a view to cross-fertilisation.

Careful harvesting prevents discoloration.

Grade for color, size and variety; graded nuts will realise from 20 per cent. to 30 per cent. more money than those ungraded. To put it in a nutshell, you must grade.

"The market's here for nuts in shell.

Produce good nuts and all is well."

Queensland.

(By Our Correspondent.)

FRUIT CROPS throughout the State, as well as agricultural and pastoral holdings, have recently benefited by a generous rainfall extending almost throughout the State. Some of the northern coastal stations have already received over 120 inches.

Unfortunately the rain was too late to benefit the setting of the citrus crop, which will barely exceed two-thirds of the average supply.

Cost of Production.

Various figures during the last six months have been published on information obtained by the C.O.D., mainly with the object of providing evidence against the application of the rural award and published averages show the industry practically throughout as being in a most impoverished condition. Average returns and costs of production have not been arrived at equitably, newly planted orchards, and those long since passed the productive stage, with others which will never reach it, have entered into averages of production cost.

This applies mainly to temperate fruits, Bananas and citrus.

Pineapples have not been afforded so much limelight, and their cultivation is admitted to afford at least the basic wage.

Early citrus are new being exported to Melbourne, and so far no complaints have been voiced. Unfortunately we can not reciprocate in respect of some lines of Pears and Apples being received from Victoria, but the occasions for complaint are very few indeed.

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Who will give all information

crop, which will be a fairly heavy one, has been entrusted to the C.O.D., who have capably managed the handling of comparatively small lines. Compulsion (or as they term it "compulsory co-operation") on a larger job (such as the Banana business) embraced obligations which were shirked or side tracked to an extent which was considered warrantable for some curtailment in powers and the Minister for Agriculture taking charge of the principal feature in regard to exports.

Should the embargo be lifted from black grown fruit, the conscientious producer can thank the few unscrupulous packers who are aided and abetted in their efforts to send south most inferior fruit by their own representatives.

As a set-off, the Minister has promised to introduce legislation covering the Banana industry, which, it is hoped, will place it on a sounder footing. It certainly cannot be upon a less sound one than at present.

Experimental Stations

are established in the south and north Queensland. The latter is particularly well situated, in excellent tropical land, and it is expected will, in conjunction with Banana matters, contain a modern nursery for the propagation of other tropical fruit trees, which have never previously been taken seriously.

Great possibilities exist, and every convenience is at hand for establishing a collection of useful trees and plants unexcelled in the southern hemisphere.

A previous attempt, made well over 30 years ago, resulted in failure, partly on account of being situated most unfavorably in all respects, and conducted during a term when political associations carried every point in respect of staffing and management; what remains of the wretched failure amongst undergrowth, only serves to further demonstrate what had pre-

viously become notorious of the place—now not to do things—as expressed by the late Sir W. McGregor, its educational value could only be viewed from the negative aspect.

VISITOR FROM QUEENSLAND.

During April we were pleased to see one of our interested subscribers, Mr. W. Clegg, of Thulimbah, Queensland; this place is in the Granite Belt, near Stanthorpe.

Mr. Clegg is noticing cultural conditions in New South Wales and Victoria, widening his knowledge of Australian fruit growing conditions. He states that excellent fruit is produced in the Granite Belt area.

Appreciation was expressed of the services of Mr. J. M. Ward, who was Fruit Expert for a time for the Queensland Government, and is now the Superintendent of Horticulture in Victoria.

Mr. Clegg states that many growers now favor the seedling stock for Apples. Where grafted stocks are used, however, Winter Majetin is considered superior to the Northern Spy.

The Granny Smith Apple is increasing in popularity. Jonathans and other varieties also do well, particularly where suitable varieties are planted for inter pollination.

A neighbor, Mr. D. Pfrunder, has made a big success with Japanese Plums. A lot of growers have done well with vegetable culture, finding good markets in Sydney; also in Brisbane, Cairns and other northern cities of Queensland.

Mr. Clegg speaks well of the quality of Oranges grown in the Blackall Ranges, Queensland. He feels it would be very helpful for orchardists if controlled cultural experiments could be carried out in various districts in order to demonstrate best possible practises under local conditions.

QUEENSLAND CITRUS CROP.

220,000 Bushels Expected.

The Director of Fruit Culture, Brisbane, Mr. G. Williams, advises as follows under date April 15:—

Owing to adverse weather conditions during the spring months, the crop of citrus fruits is below the average. It is questionable whether the total will exceed 220,000 bushels. A profuse flowering was followed by a heavy setting of young fruit, but only in favored localities, or where irrigation is applied, did a reasonable crop hold.

WHAT IS NEEDED.

We do not need more material development; we need more spiritual development.

We do not need more intellectual power; we need more moral power.

We do not need more knowledge; we need more character.

We do not need more government; we need more culture.

We do not need more law; we need more religion.

We do not need more of the things that are seen; we need more of the things that are unseen.—Ex-President Coolidge.

Victoria.

A big crop of Apples is expected in 1930, and growers are moving to make preparations for avoiding a disastrous glut.

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Victoria.

District Notes and Crop Reports.

METROPOLITAN FRUITGROWERS' ASSOCIATION.

An executive meeting of the Metropolitan Fruitgrowers' Association was held on April 4. Cr. W. Mock presiding.

Victoria Market.—The Town Clerk, Melbourne, wrote, stating horses

per cent., florists 7.9 per cent. Proportion of vehicles on first three markets of current quarter: motors 66.7 per cent., horse-drawn 33.3 per cent.

1930 Apple Crop.—The Cool Stores Association wrote re prospects of heavy Apple crop in 1930, and requesting that a delegate attend a conference to be called. Resolved that Secretary attend.

Sugar Embargo.—Mr. W. A. Webb reported having attended the Chamber of Agriculture Conference at Warragul, and that the resolution from the Metropolitan Fruitgrowers' Association had been carried, viz.:

"That the Federal Government be requested to have the embargo on sugar removed."

Death of Mr. Jas. Lang.—Appreciative references were made regarding the services of the late James Lang, of Harcourt, and it was decided to send a letter of sympathy to the family.

Codlin Moth.—A lengthy discussion took place dealing with the damage caused, more especially this year, by the codlin moth, growers having sprayed as many as seven times, but were unable to keep it in check. The life and habits of the pest, best time to spray, methods to adopt were matters growers were divided on. A more efficient service from District Inspectors to work in conjunction with a small committee in each district, was suggested, whereby the pest, if not eradicated might be better controlled.

Seasonal Report by Horticultural Division, Department of Agriculture.

Deciduous Fruit.

Owing to the light Apple crop, the codlin moth was very difficult to control. Growers who relaxed their efforts in respect to spraying and orchard hygiene, paid the penalty. Fruit generally did not hang well this season, and consequently the collection of fallen fruit was a serious problem. The recent heavy rains will supply much needed moisture to the subsoil, which became abnormally dry through the absence of seasonal rains during the past two years.

Passion vines are carrying a good crop of fruit.

Viticulture.

The perturbation in the wine market resulting from Commonwealth

Bounty alterations, threatened disaster to the smaller growers in the north-east. Grape prices can be fixed, but winemakers cannot be forced to purchase. Many Grapes seemed doomed to remain unvintaged. At the eleventh hour, Grape prices were reduced 20/- to 30/- per ton, according to sort.

In irrigated areas Sultanias have yielded heavily, and Currants will beat the 1927 yields. Gordos heavy, in view of the un-

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settled state of the wine industry, fewer were sent to the distillery, the dried pack being correspondingly increased.

The drying season has, on the whole been a satisfactory one, and some splendid dried fruit is being turned out.

The satisfactory marketing of our enormous dried Grape production constitutes an urgent and complex problem.

Citrus.

In the Mildura district there are very heavy crops of Navel Oranges,

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would not be permitted to remain at stands in Victoria Market, separate stabling was provided; otherwise growers would have to occupy west-end of L shed.

The market superintendent discussed the subject, and a resolution was carried, declining to commit growers to the proposed change, and referring same to the annual meeting in July.

The market superintendent also gave figures re stands occupied at the Victoria Market: market gardeners 47.5 per cent., orchardists 44.75

also Valencia Late and seed types. General appearances point to a good crop in this district. In other districts of the State the crop is quite up to last year's average. Beneficial rains have fallen.

SERIOUS FUNGOID DISEASES.

Investigation Needed.

Two fungus diseases, which are very puzzling to growers of soft fruits, are transit rot and brown rot.

where growers have fulfilled all normal spraying requirements, and the fruit leaves the orchard in perfect condition.

From observations it would appear that temperatures in transit have much to do with the development of diseases.

Growers point out that a useful line of enquiry would be the use of lime sulphur as a spray, and also pre-cooling the fruit and iced trucks for railage.

ous parts of Victoria, as well as from New South Wales, Queensland, and South Australia, were tested, and those which were found to be below the standard were withheld from sale.

The Department informs us that it was not nearly as severe as it might have been, many lines being allowed to pass which were on the border line, but that next week the regulations will be enforced to the letter. We, therefore, desire to warn all growers that if they send down immature fruit to the Melbourne mar-

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CITRUS NEWS AND NOTES.

The Victorian Central Citrus Association, advises under date, April 19, as follows:—

Melbourne Market.—Supplies available during the week comprised out of season Navels and Valencias. For the most part they were small and hard, and in some instances almost dry. These latter were difficult to sell at any price, and in the usual season would be unmarketable even as culls. For good sized juicy and reasonably sweet fruit, fair prices were realised, ranging from 18/- to 25/-. Plenty of inferior lines brought lower prices. The first of the new season's Navels came from Leeton. They were very nice looking fruit and brought an average of 25/- for the best counts. The demand for Lemons was not sufficient to overtake the increasing supply, and growers would do well to reduce their quantities until the market recovers. At present only the very best lines are selling at 12/- to 13/-, which was the price earlier in the week for average quality. The market has been prejudicially affected by large supplies of green and small Lemons which are almost unsaleable.

Immature Fruit.

Following previous intimations on this matter, the Horticultural Division of the Agricultural Department has taken definite steps to enforce the new maturity standard in the regulations.

The test for maturity is that the amount of acidity in 10 cubic centimetres of Orange juice shall not require more than 23 cubic centimetres of standard soda solution to neutralise it. Some of the Oranges tested this week were so far below the maturity standard that they required 35 cubic centimetres of soda to neutralise the acidity in them. No discrimination was shown where Oranges were found to be too high in acidity. Consignments of Oranges from vari-

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Losses are very severe, and it would appear to be desirable that there should be scientific investigation.

A recent examination in Sydney of 50 consignments of Peaches from Victoria, showed that 45 of the consignments were damaged with brown rot and transit rot, to the extent of from 50 to 100 per cent.

This is a very serious loss to the grower, not only in the fruit immediately lost, but in harm to the reputation, buyers losing confidence.

It is very disheartening for these losses to occur in transit, especially

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ket they will involve themselves in serious loss, not to say trouble under the law. In order to guard against the risk of Oranges being rejected, packing houses and individual growers should furnish themselves with maturity test outfits. These are obtainable at cost price, 12/6 each, postage paid, from the V.C.C.A., 360 Collins-street, Melbourne.

EXPORTING OHANEZ GRAPES.**Testing the Singapore Market.**

By the s.s. "Nieu Zealand," on April 9, a small shipment of 210 cases of Ohanez Grapes was exported to Singapore through Dennys, Lascelles Ltd.

The shipment was in the nature of an experiment, and on the result achieved will depend the future policy of growers.

Writing on this subject, Mr. H. R. Paton, Secretary of the Merbein District Ohanez Growers' Association states:—

"We are deeply indebted to the Department of Agriculture, and particularly to Mr. Basil Krone, for his instruction and demonstration on packing Ohanez Grapes for export in wood wool and tissue paper. The case used was the small 10 lb. box, and held about 12 or 13 pounds of fruit. The fruit was not weighed. Only sufficient put in to pack the case well. Each large bunch, after being wrapped in tissue paper, was put in a nest of wood wool.

"The first operation is to half fill the box with wood wool. Next put one layer of wrapped fruit on the wood wool. Each bunch then has a collar of wood wool lined round it. Lastly, a layer of wood wool is heaped on top of the fruit and the lid nailed on. Provided the fruit is clean, packing is very quick, and the result, although no better than cork, should be as good.

"The ideal way for the Ohanez grower to market his produce is to sell at reasonable prices to brokers in Australia, at an F.O.B. price. But owing to disorganisation in most of the producing centres growers are cutting prices to such a level that by an

unstable buying price the brokers are afraid to operate, and the growers are no better off.

As a result, sales are not being made as freely as they should be, and this has been the reason why we have gone into the overseas markets, on a consignment basis, ourselves."

RED HILL COOL STORES DESTROYED.

Much regret will be felt at the news of the destruction of the Red Hill Cool Stores, on April 24.

The loss is estimated at between £40,000 and £50,000. The buildings were covered by insurance. It is feared, however, that the bulk of the fruit, some 20,000 cases of Apples, were uninsured.

This is a very serious loss to growers who were holding the fruit, in a season of short supply, for better prices later in the season.

SEASONABLE ORCHARD WORK.

Mr. A. F. Thiele, a successful and appreciated fruitgrower at Doncaster, gives a summary of seasonable hints as follows:—

Spraying.—Spray all trees in late winter with red oil, one in twenty.

Cover Crops.—We do not often require to sow green crop for ploughing in, for after the first rains in the autumn the weeds grow very rank, and they are ploughed in before the winter.

Pruning.—I always had my own idea about pruning—that is, to always consider the condition of each tree, and treat it accordingly. The main thing is to thin where dense, and to cut hard when the tree is weak.

Cross-Pollination.—I have not gone into the matter of inter-pollination,

but have never planted more than 4 or 5 acres of one variety in one lot, and have always found them to have borne well.

District Plantings.—Only Peach trees are being planted, and these are where growers are cutting out Pear trees—the latter are grown extensively.

Manuring.—We manure extensively with stable manure, and where required to stimulate the crop in spring or summer, a little artificial manure is given.

AN "EXPORT CONSCIENCE" NEEDED.

Mr. H. R. Paton, Secretary, Merbein District Ohanez Growers' Association, writes as follows:—

One of Australia's greatest needs is an improved and increased export trade of agricultural products.

Although he does not realise it, there is a moral obligation on every Australian business man—no matter what his profession is—to help his country in finding an overseas market for some of his country's produce.

Australia needs her people to develop an "export conscience."

Suggest to the motor-car importer, or to the clothing manufacturers, that he should export Australian eggs or fruit, and he would be probably amused. Would not know where to start, and probably would say he could not be bothered, anyway.

But if all of the men of industry exported one ton of agricultural produce each through the overseas people from whom they are already importing goods, the result would be wonderful to Australia.

I believe most of Australia's business men are big enough—far-sighted enough—and capable enough to develop an "export conscience."

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South Australia.

Barossa Orchardist" writes (17/4/29).—The past summer in South Australia has been the driest on record, no useful rain having fallen since October, and with an unusual prevalence of insect and bird pests, the general results of the fruit harvest have been very unsatisfactory. In spite of these adverse conditions, prices have been at a low level, with a limited demand, except as regards Apples the crops of these being a complete failure.

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A few years ago growers were advised to plant Pears for canning, owing to the favorable prospects of the export trade in this line, and extensive plantations of the Williams variety were made in the Barossa and other districts. This season, before the trees have come into bearing, local factories could only take a portion of the general crop at £5 to £6 per ton, as it was said to be impossible to export the surplus profitably.

If the crop had been heavy, a large

quantity of the finest canning Pears in the world would have been wasted, or fed to pigs.

With regard to dried fruit, the position is no better, prices being below pre-war rates, when wages and other expenses were about half of what they are at present.

The most serious problems affecting our fruit industry are over-production in Australia, and the increasing competition with countries having a much lower cost of production. This applies to all varieties of fruit, fresh, canned or dried, so that until profitable markets abroad can be assured, the extension of orchards should be discouraged or restricted as far as possible.

In the meantime
our local markets
might be extended by advertising and propaganda, which should be continuous and educational.

The public should be taught, that, for the maintenance of health and efficiency, fruit is as much a necessity as any other article of diet, and not a luxury to be dispensed with when times are bad.

The Federal and State Governments, who are responsible to a large extent for over-planting, should assist financially in this direction, not only for the benefit of growers, but of the general public, and also to prevent the collapse of an important industry. The editor may confirm me in the opinion that if the consumption per head of the population in Australia was equal to that of America, the position would be greatly relieved.

(Our correspondent is quite right, Australians do not eat enough fruit. Educational propaganda would very considerably extend the local market. —Ed. "F.W.")

At a recent meeting of the Advisory Board of Agriculture, several matters affecting fruitgrowers were discussed.

Standard Fruit Case.—In reply to a request for the favorable consideration of the Canadian standard case for overseas export, the Minister of Agriculture forwarded the following minute:—"In view of the diversity of opinion as to the wisdom of doing away with the present distinctive case, the fact that the Canadian case requires one-piece sides, making it practically impossible to use local timbers in its manufacture, and that

it contains less than one bushel, I am not prepared to urge its adoption as the standard export case for overseas export."

Blackwood Experimental Orchard.—Eulogistic references were made as to the value of the work that was being conducted at the Blackwood Orchard; members contended, however, that such work was more or less nullified unless records were easily and readily accessible to those interested. It was pointed out if approval were obtained for clerical assistance to compile the records, the printing of them could be arranged for without much difficulty. On the motion of Mr. H. S. Taylor, seconded by Mr. F. Coleman, it was

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resolved "That this Board, impressed with the value of the work being done at the Blackwood Experimental Orchard, and of its unique collection of fruit trees, urges that provision should be made for the compilation and publication of the records of the orchard." The resolution was carried, and a committee consisting of Messrs. P. H. Jones, H. Wicks, H. S. Taylor, and Dr. Richardson, was appointed to bring the matter under the notice of the Minister.

FRUIT MARKETING ORGANISATION.

Activity in South Australia.

GROWERS in South Australia are moving to firmly establish the South Australian Fruit Marketing Organisation which was recently launched at the suggestion of Mr. H. G. Colombie.

A comprehensive statement has been issued, setting forth the objectives. Committees have been formed throughout the Apple-producing sections of the State, and growers are invited to join, the membership fee being 7/6.

It is pointed out that growers have fared badly in the export markets during the past two seasons. South Africa, South America, and N.Z. are materially increasing exports and improving their organisation. Australia must not lag behind. Co-operation between all the States in export matters is imperative.

The objectives of the South Australian Fruit Marketing Association are the co-operation of all growers, shippers and others interested, to secure elimination of undesirable varieties; to arrange for equitable distribution in the present British markets and open up fresh markets; to give

expert attention to matters relating to inspection of rail facilities, freight, special chambers to ports; refrigeration, insurance, exchange, etc. To collect statistics, to form an advisory committee overseas to secure the best advice regarding marketing conditions and arrange for diversion of consignments they deemed advisable.

The F.O.B. sales are not to be interfered with nor the freedom of growers to consign to any particular house.

The Provisional Committee is as follows:—Mr. H. J. Bishop, first President and Chairman.

Six Growers' Representatives: Mr. H. N. Wicks, Balhannah; Mr. F. B. James, Cudlee Creek; Mr. M. G. Basey, Cherry Gardens; Mr. J. B. Randell, Gumeracha; Mr. J. S. Hammatt, Williamstown; Mr. R. O. Knappstein, Clare.

Four Shippers' Representatives: Mr. G. A. W. Pope, Government Produce Department, Adelaide; Mr. D. Blyth, Messrs. George Wills & Co. Ltd., Adelaide; Mr. G. Selth, Messrs. Selth & McRae, Adelaide; Mr. A. V. Pitt, Messrs. A. E. Pitt & Son, Adelaide.

The Committee emphasises the necessity of making the South Australian Fruit Marketing Association a

success by enthusiastic support. Never before in history have growers, shippers and agents all co-operated. Success means existence and prosperity.

SOUTH AUSTRALIA.

Pears and Plums Desired in London.

Kelsey Plums 5d. Each Wholesale.

Pears such as Packhams, B. Bosc and Comice were reported to be needed in England in a letter from the South Australian Trade Commissioner (Mr. R. M. K. Lewis), in a letter dated March 14, to the general manager of the South Australian Government Produce Department, Mr. G. A. W. Pope. Continuing, Mr. Lewis stated: "South Africa has a poor crop of Pears, and the market here is short of quality Pears. It is necessary to pre-cool the Pears and carry them in chambers separate from Apples. Pack in half-cases, and make the package as attractive externally as possible. During the week a fair quantity of Argentine Pears (Bartlett) have been marketed in bushel cases. These arrived fully ripe and made round about an average of 15/- per case. Provided you can land the Pears in good condition, well graded and packed in half-bushel cases, a price of 8/- to 10/- per half-case should be forthcoming.

I am watching the Pear position closely on this market, and am of the opinion that we should concentrate on large shipments. Others are reaping the benefit of the large luxury demand that exists for this class of fruit, and it is an astonishing sight to see the perfect packing methods of South Africa and the beautiful condition in which they market their Pears, Peaches, Plums, Nectarines and Grapes.

The Plum trade is essentially a luxury one, and it is imperative, in order to get the fancy prices, to market goods without blemish and of large bold appearance. Prices to-day can be quoted:—Kelsey and Gaviota, 5/- to 7/-, counts 28 to 40; Peaches, 4/6 to 9/-, according to variety, counts 21 to 25.

You will note that 9/- for 21 Peaches first cost is approximately 5d. per Peach. This means that luxury trade retailers are asking 9d. to 1/- each. Nectarines are making 3d. each first cost, and are selling in beautiful condition. Pears, including Williams, Buerre Hardy and Winter

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Nelis, are making the equivalent of approximately 20/- per bushel case. Grapes such as Colmar and White Hannepoot, are making approximately 1/6 per lb. The Apple market is very firm, with Newtowns up to 12/6, with a strong tendency to advance.

Fighting Insect Pests in the Orchard.

Black Aphids of Citrus Trees.

This year is a particularly bad one for these aphids on Orange and Lemon trees. The young twigs are generally found to be covered with the insects. They suck the sap from the twigs, causing them to become weakly.

Spray with any of the tobacco sprays, such as black-leaf 40 or nicotine sulphate.

Light-brown Apple Moth Larvae.

The greenish caterpillars of these moths are now fairly numerous in orchards where the "Yates" Apples are growing. These insects cause much damage by biting small holes in Apples. Fortunately this insect is easily destroyed by the arsenate of lead sprays.

Codlin Moth.

Examine bandages and loose bark, and destroy all larvae and pupa. For further notes, see "The Fruit World," April 1, 1929.

Woolly Aphids.

It is now rather late in the season to put out the woolly aphid parasite (*aphelinus mali*).

Spray with "Volck" or any of the spraying oils.

Painted Apple Moth.

See "The Fruit World," April 1, 1929.

Cross or Holy Bugs on Citrus Trees.

These large plant bugs have been exceedingly numerous this season on Lemon and Orange trees, causing the tips of the branches to turn black. Spray with phenyle spray, which is prepared as follows:—Take 1 quart of phenyle, 3 lb. washing soda, one bar yellow soap, 40 gallons water. Shred of soap and dissolve it in hot water, to which the other ingredients should be added, and the mixture made up to 40 gallons.

Orange Butterfly.

Caterpillars (yellow, black and spiny) of this butterfly are very plentiful in citrus orchards at the present time. They do considerable damage to the young growths of Orange and Lemon trees. Spray with arsenate of lead.

Dried Fruit Industry.

AUSTRALIAN DRIED FRUITS.

Record Crop.

The Australian dried fruits crop for this year of 64,000 tons is a record. Victoria produced 68 per cent., or 44,000 tons.

Of the total crop, about 13,000 tons are required for the local market, leaving 51,000 tons for export.

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It is likely that £10,000 will be spent in publicity work in stimulating markets overseas. The total crop is estimated to be comprised as follows:—Currants, 14,300 tons; Sultanas, 42,000 tons; Lexias, over 7,000 tons.

Of this quantity Victoria has produced about 7,000 tons of Currants, 32,000 tons of Sultanas, and 5,000 tons of Lexias.

The estimated quantity for the local market is 3,600 tons of Currants, 6,000 tons of Sultanas, and 2,500 tons of Lexias.

SEVERE FROSTS IN CALIFORNIA.

Damage—£10,000,000.

A severe frost occurred in many of the fruit areas of California during April, which corresponds with the month of October in Australia. Immense damage was done to fruit crops, a preliminary estimate being in the region of 50,000,000 dollars.

The frost is estimated to have reduced the anticipated crop of 230,000 tons of Raisins by 25 per cent.

Opinions in the trade are that there will be little or no Californian Raisins on the English market this year, and, with this will improve the prospects for Australian Currants, Sultanas and Lexias.

In addition to the damage wrought to vines, deciduous fruits and nuts also suffered. It is extremely unfortunate for the growers who have suffered losses, but on the other hand the whole position will probably be stabilised. Already marginal vineyards in California are being uprooted.

N.S.W. DRIED FRUITS BOARD.

A meeting of the N.S.W. Dried Fruits Board was held at Sydney on March 27 and 28. Mr. G. J. Evatt presiding; there were also present, Messrs. W. M. Nulty (Murrumbidgee), and H. R. Sloan.

Export Quotas.—Under the State Act, the following export quotas were fixed: Currants 74 per cent., Sultanas 50 per cent., Lexias 66-2/3 per cent.; this applies to intrastate transactions. Under the Commonwealth Act, tions also, the following proportions were decided on by the Minister for Markets and Transport: Currants 74 per cent., Sultanas 90 per cent., Lexias 66-2/3 per cent.

Levy for 1929.—Decided to re-impose the levy of 1/16th of a penny per lb. on Currants, Sultanas and Lexias.

N.S.W. Representation on Export Board.—The Act provides for three representatives elected by the growers of Victoria, N.S.W. and South

Australia, and one representative for W.A. Owing to the preponderance of growers in Victoria and South Australia, there was only a very remote chance of N.S.W. being represented on the Board. It was decided to seek an amendment providing for a direct representative from N.S.W., similar to the provision regarding Western Australia.

Alleged Illegal Packing Sheds.—It was decided to investigate the report that two unregistered packing sheds were operating in N.S.W. Heavy penalties are provided under the Act.

"SUN MAID'S" PRESIDENT.

Mr. Ralph P. Merritt, who was for several years President of the "Sun Maid" Raisin-growers' Association, recently resigned, and Mr. J. M. Leslie, of Del Rey, California, has now become President.

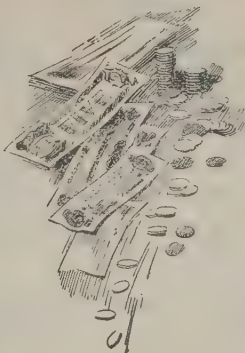
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Latest Advices from U.S.A.

THE CODLIN MOTH is the major pest in the Apple and Pear orchards of the State of Washington, on the Pacific Coast of U.S.A.

Conditions there are similar in many respects to those in Australia.

Certainly it is the boxed Apple trade of the U.S.A. Pacific Coast which competes with Australian fruit in England.

Growers in Australia and New Zealand, will therefore note with great interest the following spray recommendations which were prepared by representatives of the Washington State Experiment Station, the Federal Bureau of Entomology, and the Washington State Department of Agriculture—which we have republished from "Better Fruit."

1. The severity of codlin moth infestation depends on the temperatures at the time of emergence of the moth, length of growing season and degree of infestation the previous year. From year to year such infestation varies in intensity in different districts, and in different orchards, and in different portions of the same orchard. The cold weather of the winter of 1928-29 does not warrant any let-up in the use of control measures in 1929.

2. Within a single district orchards vary in exposure, density of tree growth, type of cultivation (whether cover crop or clean culture), and type of soil. All of these factors may affect the time of emergence

and development of the codlin moth.

3. Because of these variable factors specific spray recommendations cannot be given for an entire State or district. The spray programme, while based on general principles, must be worked out in detail for each individual orchard.

4. Extensive experimental work for codlin moth control was conducted in 1927 and 1928, and will be continued in 1929. On the basis of this and former work, as well as practical results in commercial orchards, the following is recommended as a guidance to the grower for 1929.

5. The general principles are here outlined for the guidance of the grower:—

(a) Spray Treatment—

1. Arsenate of lead is the only known practical and effective insecticide that can be unconditionally recommended for codlin moth control at this time. One pound of arsenate of lead to 50 gallons of water is usually sufficient. Heavier dosages are not recommended except under conditions of extreme infestation, because of consequent difficulties of the residue removal.

2. Oil applied in combination with arsenate of lead and oil in combination with nicotine sulphate have proven effective for codlin moth control but neither combination is unconditionally recommend-

ed because of the possibility of injury to fruit and foliage. If used at all, not more than two applications are advisable. Neither oil alone nor nicotine sulphate alone is as effective as lead arsenate or lead arsenate-oil or nicotine sulphate-oil combinations.

3. Other insecticides must be considered either ineffective or in the experimental stage. Do not use them except for experimental purposes.

4. The time of application, and number of sprays to be used, will vary in different orchards and in different localities, and should be determined by each individual grower.

5. Major efforts for codlin moth control should be directed toward first brood elimination.

6. The calyx spray should be applied before the calyx lobes have closed. Experimental evidence shows that this spray is important and should not be omitted.

7. The cover sprays should be timed carefully by the use of moth traps placed well up in the trees, away from packing sheds or other buildings. The first cover spray should be completed within ten to twelve days after moths are caught in the traps. If thermometers are available, temperature records should be taken as soon as first moths are caught in traps. If the temperature is 60 degrees at dusk, eggs will be laid and the first cover spray should be on the trees within ten to twelve days. Careful growers get the first worm, for it is he that comes back to form the second brood.

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8. On severely infested orchards cover sprays should be applied at intervals of 10 to 14 days, according to the activity of the moths as determined by the bait traps. In high altitudes or isolated orchards, having light infestation, one or possibly two cover sprays may suffice.

9. Cover sprays for first brood worms can stop ten days after moths practically cease to enter traps. This usually comes five or six weeks after the first moths appear.

(b) Second Brood Sprays—

If moth traps show a marked increase in number of moths caught after July 1 (January 1 in Australia), or if there is an average of three to five worms per tree by that date, one or more sprays for second brood should be applied.

(c) Thoroughness in All Sprays—

Be thorough in spraying, cover every portion of the tree and give special attention to the tree tops, since that is where the extra fancy Apples grow and where most of the eggs are laid. Timeliness and thoroughness cannot be over-emphasised.

(d) Supplemental Treatment—

1. Destroy all over-wintering larvae in warehouses, Apple boxes, packing sheds and other buildings. Place all boxes within the packing shed of which all doors, windows and other openings are tightly closed during the spring or summer, in order to imprison the moths. Where a closed shed is not available, all boxes should be fumigated. Avoid promiscuous transportation of infested Apple boxes from one orchard to another.

2. Scrape rough bark from trees and burn to destroy over-wintering larvae hibernating under the bark. This should be done to a depth of one to two inches below the ground.

3. Place moth traps well up in trees just before calyx spray is given, to catch many moths before eggs are laid.

4. Band trees June 1 (December 1 in Australia), and examine every ten days. Rough barked trees should be scraped before banding. The bands will catch approximately 45 per cent. of the worms that leave the Apples.

5. Fruit should be thinned to break clusters and to remove wormy fruit. This should be destroyed and not buried.

Signed—

Edward C. Johnson, Dean of Agriculture and Director, Agricultural Experiment Station, State College of Washington, Pullman.

J. I. Griner, Supervisor of Horticulture, State Department of Agriculture, Olympia.

Geo. E. Harter, District Horticultural Inspector, Wenatchee.

E. J. Newcomer, Senior Entomologist in charge Federal Entomological Laboratory, Yakima.

Anthony Spuler, Associate Entomologist, Agricultural Experiment Station, Washington State College, Pullman.

R. L. Webster, Entomologist, Agricultural Experiment Station, Washington State College, Pullman.

INARCHING PEARS.

There is a pretty well founded idea going around that all Pear trees on Jap. Pear root, when they get older start to decline in production and vitality as well as produce considerable hard and black end Pears, states a Californian farm adviser, in the "Pacific Rural Press." Inarching, or replacing the old root system with French seedlings seems to date to be the most logical remedy to rectify this condition. Thousands of seedlings are being inarched throughout the State annually.

U.S.A. FRUIT OUTLOOK.

In the United States, the 1929 outlook of citrus fruits indicates, as did those of the three previous years, a considerable increase in the bearing acreages of Grapefruit and Oranges. Many trees now in bearing, have not reached the age of maximum yield, and a large increase over production in recent years may be expected in years when favorable growing weather prevails. Under these conditions price levels below those of recent years may be anticipated.

Commercial production of Apples for the country as a whole will continue at a high level, and probably will increase over a period of five or ten years. The rate of increase is likely to be lower than during the last ten years, but with the large number of trees now in orchards, the possibility of heavy production and low prices will continue.

The outlook is for continued heavy production of Peaches for the next few seasons, whenever weather conditions are favorable.

Heavy production of Grapes in the West is in prospect for several years to come. It appears that any probable immediate increase in consumption will be too limited to aid in marketing the crop unless aided by an immediate reduction in acreage, particularly in California. — "Pacific Rural Press."

"FRUIT WORLD ANNUAL."

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J. H. Thorp, Nelson; A. T. Douglas, Nelson;
B. G. Goodwin, Mapua; G. Stratford, Motueka;
D. J. Hogg, Blenheim; L. Paynter, Christchurch;
W. K. Dallas, Dunedin; W. R. L. Williams, Alexandra;
M. Davey, Wellington.

Assistant Orchard Instructors—J. O. Anderson, Motueka;
I. L. Nottage, Auckland; J. D. R. Carolin, Christchurch;
S. Frew, Christchurch.

Fruit Inspectors—G. Harnett, Auckland; F. M. Talbot, Auckland;
R. E. Binfield, Auckland; A. Dicker, Wellington;
I. H. V. Inwood, Dunedin; T. Conway, Hastings;
A. Lennie, Invercargill.

Apiary Instructors—G. V. Westbrooke, Auckland;
T. S. Winter, Hamilton; E. H. Barry, Hastings;
D. S. Robinson, Palmerston North; R. J. Crichton, Greymouth;
W. J. Fix, Christchurch;
S. C. E. Rhodes, Dunedin.

HORTICULTURAL DIVISION, QUEENSLAND.

Minister—Hon. W. Forgan Smith.
Director of Agriculture—Mr. H. C. Quodling.
Director of Fruit Culture and Chief Quarantine Officer for Plants—Mr. G. Williams.
Staff Clerk—Mr. H. G. Crofts.
Assistant Instructor in Fruit Culture—Mr. H. Collard.

Senior Inspector, Diseases in Plants Act, and Deputy Chief Quarantine Officer—A. Person.

Inspectors, Diseases in Plants Act—T. W. Lowry, W. R. Bennett, J. W. Brown, G. W. Jackson, W. Lewis.

Assistant Instructors in Fruit Culture—W. J. Ross, Cairns; Wm. Leslie, Toowoomba; E. F. Duffy, Bowan; F. G. Connolly, Rockhampton; H. St. J. Pratt, Stanthorpe.

Manager, Banana Experimental Station—H. J. Freeman.

Field Inspectors—W. Maggs, F. L. Jardine, D. McLaurin, R. L. Prest, H. Barnes, C. G. Williams, S. A. Green, E. J. Lorraine, S. E. Stephens.

Port Inspectors—J. Anderson, A. Wooller.
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Fertilizer

Nitrate of Soda

It is not whether you can afford to fertilise, but how much you will lose by not doing so.
The man who does, obtains top prices and increases his yield.

Why?

Because Nitrogen is the ingredient which exerts a predominant influence on formation of the foliage and all new growth, and NITRATE OF SODA has Nitrogen readily and totally available for plant food without further change and does not exhaust the lime contents of soil.

Nitrate of Soda

- (1) Is entirely soluble, clean to handle, and has no objectionable smell.
- (2) Owing to its solubility and ready availability may be applied at any time that Nitrogen is considered to be required.
- (3) It may be applied broadcast on the surface of the soil or it may be dissolved in water and used as a liquid manure.
- (4) It penetrates through the soil particles as soon as dissolved, and encourages the downward trend of roots.
- (5) It does not make the soil acid or sour.

Nitrate of Soda

Increasing Yield of Citrus Trees

Mr. F. W. PRATT, "Dane Hill Orchard," Pennant Hills West, N.S.W., writes, November, 1927:—

"Of all fertilisers I find that Citrus responds more quickly—almost immediately to NITRATE OF SODA, and in my opinion it stands easily first—all this season my consignments have sold speedily at TOP market rates."

Nitrate of Soda

is an important factor in fruit growing. Orchards which receive a reasonable amount of care and attention, including a judicious and liberal use of suitable fertilisers are invariably very profitable investments.

In the Agricultural Gazette of N.S.W., July 1st, 1927—Mr. W. B. Stokes, Orchard Inspector, and Mr. R. J. Benton, Fruit Inspector, speak very highly of NITRATE OF SODA.

Fruit Trees are living organisms, deriving nourishment from air, water, soil, and controlled by light and heat and considerably helped by nature's own fertiliser—NITRATE OF SODA.

VEGETABLE GROWERS:—NITRATE OF SODA is beneficial to all vegetable crops when used in judicious quantities—Cabbages, Cauliflowers, Lettuces, Asparagus, Celery, Spinach, Onions, etc., etc., specially respond to it. It should be used, however, with caution on Leguminous Crops—Peas, Beans, etc.—only small quantities being applied if any is deemed advantageous to use.

SMALL APPLICATIONS at intervals are always more effective than one large dose.

DO NOT SPRINKLE ON FOLIAGE.—Soak your empty bags, and use the water.

Any difficulty in obtaining supplies or information required, apply—

Nitrate of Soda

G.P.O. BOX, 2037 L

SYDNEY

PORT OF MANCHESTER

Extracts from Official Market Reports

(Published weekly by British Minister of Agriculture) willingly forwarded to Growers, Exporters and others on application to address below. These records

PROVE Prices realised for Imported Fruit AT MANCHESTER Challenge Comparison

With results obtainable at any other market, as the following examples indicate:—

	Hull.		Liverpool.		London.		Manchester.	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
	quality.		quality.		quality.		quality.	
18/1/29. Oregon Newtowns (case) ..	15/6	13/6	15/-	13/-	13/6	11/-	17/-	14/-
American Greenings (barrel) ..	35/-	30/-	31/-	26/-	35/-	30/-	36/-	30/-
25/1/29. Oregon Newtowns (case) ..	15/6	13/6	13/6	11/6	14/-	11/-	16/-	14/-
" York Imperials (barrel) ..	36/-	29/-	28/-	22/-	30/-	24/-	36/-	34/-
" Baldwins (barrel) ..	30/-	26/-	25/6	23/6	30/-	20/-	32/-	28/-
" Russets (barrel) ..	34/-	28/-	31/6	28/-	30/-	25/-	35/-	33/-

GROWERS AND EXPORTERS! WHY NOT SHIP DIRECT to the best market as your competitors do?

For information as to charges, selling brokers and importers, etc., apply to:—

Cables & Telegrams—
"Portoman," Sydney.

CAPTAIN W. J. WADE,
8 Bridge St.,
SYDNEY, N.S.W.

APPLE EXPORT GRADING REGULATIONS.

The new Apple export grading regulations have met with a divided reception on the part of growers and exporters.

Mr. J. W. Bailey, of Narre Warren, Vic., states he believes it to be a mistake to prohibit the export of "plain" grade. In some seasons it might be very necessary to export fruit which could be classed under this grade. He would have no objection to the fruit being exported, provided the packages were clearly labelled "plain grade."

A prominent exporter sets forth his views thus:—

"I feel sure that there is not one grower in a hundred is aware of the effect of the amendment to the regulations which it is proposed to bring into force.

"Under the existing regulations, the standard grade provides for certain conditions, which have been well recognised, and under which a substantial export c.i.f. and e. trade has been built up. The fact that this trade has come into existence is proof that the buyers are satisfied with the standard as at present existing, but under the new proposals by which it is intended to do away with the 'plain' grade, the standard also becomes seriously affected by virtue of the fact that the grade as previously in existence for standard is being considerably lowered. The size of the fruit for instance has been reduced, and the percentage of defective fruit has been increased.

"In my opinion this can serve no useful purpose, but on the other hand it can do an extraordinary amount of harm to the industry, simply because the buyer will not know whether he is under the new regulations and the packer who at present is adverse to packing his fruit under the 'special' grade, will have no option but to pack under the 'standard,' the reason for this being that there is not enough latitude left in the special grade for human error, and yet the 'standard' grade opens the way to a serious reduction in the quality of the fruit as compared with the previous practice."

Tasmanian Opinion.

Mr. J. P. Piggott, M.H.A., manager, Port Huon Fruitgrowers' Co-operative Association Ltd., writes to the "Fruit World," on April 23, strongly objecting to the revised Apple export grades recently announced by the Commonwealth Government.

"We, in Tasmania," states Mr. Piggott, "are most desirous of keeping up the quality and standard of our fruit. We were the first to move in this regard, and continue to watch it very carefully, but it is an impossible idea to think that an inflexible, hard and fast standard can be laid down for all times.

"The action of the Federal Government and Departments in respect to this matter, is much to be deplored, because they have taken up the attitude of "stand and deliver."

AGENTS WANTED

To Influence Consignments of Apples by
Reliable Firm

Write, Stating Terms, Etc., to—

HARTSTOKE, FRUITERS LTD.

Brentford Market, Middlesex.

Code: A.B.C., Fifth Edition.

Cables: "Hartstoke," Brentford, Middlesex.

PATENTS GEORGE A. U'REN

PATENT ATTORNEY

"Henty House," 499 LITTLE COLLINS ST.
MELBOURNE.



“Laying at 6 Months and have continued ever since”

In most cases a fowl has now left the moulting season for 1929 behind her. In other words, she has had her holiday spell from laying and should again be back at work laying eggs. The trouble, though, with a number of fowls is that they are still weary after the moult and need extra nutriment to enable them to make another start. Actual tests by poultry owners themselves have proved, and are proving, beyond any shadow of doubt that no extra nutriment is appreciated by the hen as much as “Karswood” Poultry Spice (which contains dried and ground insects). Here is one of the tests. Read about it, and, in Biblical language, go and do likewise.

“Laying under 6 mon'hs.”

For the past fourteen months I have been using your Karswood Poultry Spice with good results. I have recommended it to several people of my acquaintance, and at least half a dozen of my neighbours are using Karswood on my advice. At under 6 months I had White Leghorn pullets laying, and they have continued ever since. I have followed directions, and can safely say that anybody who

uses the Karswood properly will be guaranteed good results.

(Sgd.) Mrs. P. W. WILSON,
Post Office, Uralla.

Make this Test.

Go to your local grocer, storekeeper or produce dealer. Get a 1/- packet of Karswood Poultry Spice, then give it to half-a-dozen of your birds, in accordance with the directions on the packet. Do not expect immediate results—Karswood works naturally, not suddenly. It takes at least a fortnight to produce results, but they are good and sure.

Note the Economy.

- 1/- packet supplies 20 hens for 16 days.
- 2/- packet supplies 20 hens for 32 days.
- 13/- (7-lb. tin) supplies 140 hens for 32 days.

Supplies.

Karswood Poultry Spice is obtainable from all wholesalers and stores at the following standard retail prices: ½-lb. packet, price, 1/-; 1-lb. packet, price, 2/-; 7-lb. tin, price, 13/-; 14-lb. tin, price, 25/-; 28-lb. tin, price, 48/-.

**KARSWOOD
POULTRY SPICE**

2-M.29

Increases egg-production but does not force or injure poultry



Poultry.

THE keeping of poultry is a profitable sideline for fruitgrowers.

Proper attention seasonably to essential details, will keep the birds healthy, and will ensure profitable yields of eggs.

A fruitgrower once complained that his hens were unprofitable, and he decided to sell them, as he was only getting three or four eggs a day from sixty birds.

In order to have the birds ready for the buyer he put them in an enclosure, at once a marked improvement took place, 30 eggs per day being laid, and he was more than pleased that the proposed purchaser did not come to clinch the deal.

What was the reason for the increase?

It was not due to the birds being shut in, as was at first supposed, but because they were given food regularly, which they did not receive on the free range.

Green Feed all the Year.

The following list tells the poultry farmer what and when to sow in order to maintain a constant supply of green feed for his birds throughout the year:—

January: Maize, cowpeas. February: Maize, barley, rape, field peas. March: Maize, barley, field peas. April: Lucerne, barley, field peas, red clover, bokhara or sweet clover. May: Rye, lucerne and clovers. June: Rye. July: Rye. August: Silver beet. September: Hungarian millet, maize. October: Cowpeas, maize Hungarian millet. December: Cowpeas, maize.

Crops sown according to the above recommendation will provide fodder for poultry in the following months:—

January: Lucerne, cowpeas, maize, silver beet. February: Lucerne, cowpeas, maize, silver beet. March: Lucerne, cowpeas, maize, silver beet. April: Lucerne and clovers, cowpeas, maize, silver beet, barley, rape. May: Lucerne, and clovers, cowpeas, silver

beet, barley, rape. June: Barley, rape, field peas. July: Barley, rape, field peas. August: Barley, rape, field peas, rye. September: Clovers, field peas, rye, rape. October: Lucerne and clovers, field peas, silver beet. November: Lucerne and clovers, maize, Hungarian millet, silver beet and clovers.

In the case of lucerne, clovers, rye, rape and silver beet, repeated cuttings may be made; these are allowed for in the list. The availability of these feeds as shown above is to some extent contingent on rainfall or a good water supply. In the case of poor soils, lucerne and clovers will do far better in wide drills; they should be top-dressed with animal or poultry manure and kept cultivated between the drills. Sweet clover is a crop which is worth bringing under the notice of poultry farmers, for it undoubtedly does better in the poor soils of the metropolitan area than does lucerne. It should not be cut too close to the ground, as the new growth comes from the lower parts of the stem, and not from the crown as with lucerne. Nor should it be allowed to go too long without cutting as it becomes coarse.

Beekeeping.

BESIDES the value of the honey, bees are of wonderful value in an orchard because of their activity in fertilising blossoms.

Those who have in mind keeping bees for profit, would do well to gain experience in an apiary.

For fruitgrowers who intend keeping bees as a side-line, however, it is quite all right to start in a small way.

Begin with two or three hives, and gain experience by practice. Also there is much suitable literature available on beekeeping, which it would be well to study. There are some essential principles to grasp.

"The Australasian Beekeeper"

The leading Bee Journal in the Southern Hemisphere.

A monthly magazine entirely devoted to beekeeping. Published in Australia for Australasian Conditions. Subscription (5/- per year, prepaid, post free), may start now.

Free sample copy available on application to the publishers, Pender Bros. Ltd., Box 20, West Maitland, N.S.W.

Several ways are open to one contemplating beekeeping in a small way: (1) Swarms; (2) Full colonies; (3) Box hives; (4) Nuclei.

Some of the fundamental necessities include a smoker and a veil. The smoker with the bent nozzle is recommended.

Swarms are available from spring to summer—say from September to December. They are obtainable from dealers or beekeepers having a surplus, and are sold by weight. The hives and frames should be ready beforehand. When starting with swarms there is no danger of introducing disease.

Where it is intended to start with full colonies, it is possible to obtain hives with finished combs and broods, and enough bees to cover all the combs.

There is a risk of disease, however in buying bees in frame hives, as it is frequently the neglected or diseased hives which are offered for sale.

Clean colonies of bees in box hives may be obtained and a commencement made in this way; beekeeping may also be started with a nucleus or small colony of bees with a queen and two or three frames of comb with brood, and some stores.

A Useful Hint.

Whenever bees are inclined to be cross or have been unduly disturbed, due to robbing or taking off honey, transferring, etc., writes a beekeeper in the "American Bee Journal," never light your smoker on going into the apiary before putting on your veil, and never take off the veil until you have disposed of the smoker. The odor of the smoker causes the otherwise harmless bees, whose keenest sense is smell, to recognise you as their plager, and quickly brings about your head a swarm of angry stinging bees..

The Fruit Trade

Market Reports and News Items

AUSTRALIAN FRUIT IN BRITAIN AND THE CONTINENT.

Cabled Reports.

LONDON.

Ex the "Orvieto."

The South Australian Plums brought by the "Orvieto," are selling at from 3/- to 5/- per tray. They are in fairly good condition, but are somewhat small in comparison with South African Plums.

Ex the "Euripides."

West Australian Apples, ex the "Euripides," were somewhat immature, and a few were spotted. Demand was poor, owing to a plentiful supply of American fruit. Gravensteins realised 10/- to 12/- per case; Cox's, 13/- to 13/6; Ribstons, 13/-; King Pippins, 10/-; Alexanders, 15/-, and Adams, 9/-. The Pears were in good condition. Trays of Comice brought 9/- to 14/-, and Packhams, 5/6 to 8/-. Grapes were of rather variable condition, some being considerably wasty. Sales in three-quarter bushel boxes were as follow:—Santa Paula, 10/6 to 12/-; White Muscat, 5/-; Red Malaga, 2/- to 9/-; Red Prince, 13/-, and Waltham Cross, 11/-.

Ex the "Chitral."

The quality and condition of the "Chitral" shipment of Tasmanian Apples was moderately good. Many Cox's Pippins and Ribston Pippins were affected by bitter pit, and a considerable amount of defective fruit was noticeable.

Sales were made of Ribston Pippins, 10/6 to 12/6 a case; Alexanders, 9/- to 10/-; Alfristons, 10/6 to 13/3; Cox's Pippins, 16/- to 18/-.

The shipment of Victorian Pears was landed in variable condition. The Williams were very wasty, and mostly almost worthless, a few sound half-cases realising 10/- each. Howell's were in good condition, and realised 18/- to 20/- a case, while Capiaumonts were also in good condition, and sold at 15/- a case.

Ex the "Jervis Bay."

The "Jervis Bay's" West Australian Apples sold as follows:—Jonathans, 11/- to 14/- per case; Cox's, 14/- to 17/-; Cleopatras, 13/- to 15/-; Adams, 11/- to 11/6; Pears, in cases, Vicars, 17/- to 18/6; in half-cases, Vicars, 11/6 to 12/6; Josephines, 11/6 to

16/-; Packhams, 10/- to 12/-; in three-quarter cases, Josephines, 15/- to 18/-; Packhams, 14/6 to 17/-; Boscs, 13/6 to 20/-; Clairgeau, 13/6; in trays, Winter Cole, 6/6 to 7/6; Josephine, 6/6 to 7/6; Winter Nelis, 5/6 to 6/-; Packhams, 6/9 to 7/3; Winter Bartlett, 7/-. Grapes were rather variable; Black Malaga, in three-quarter cases, brought 8/- to 11/-; Wortley Hall, 4/- to 6/6; in half-cases, Flame Tokay, 8/-, and Santa Paula, 6/6 to 7/-. Victorian Pears, in cases, Boscs, 24/-; Howells, 18/- to 19/-; Capiaumont, 16/-; in half-cases, Winter Nelis, 10/- to 10/6; Anjou, 12/- to 13/6, and Boscs, 13/- to 14/-.

Ex the "Otranto."

The "Otranto's" Apples sold as follow:—West Australian Jonathans, 11/- to 14/- per case; Cleopatras, 13/- to 14/-; Dunns, 12/9 to 16/6. Grapes, in three-quarter cases, sold as follow:—Red Prince, 10/- to 12/-; Black Malagas, 9/-, a few at 12/-, and Bridles, 7/- to 9/-. Tasmanian fruit was of moderate quality, some Cox's and Ribstons were much affected with bitter pit. Cleopatras realised 8/6 to 10/6; Worcesters, 7/6 to 11/6; Cox's, 11/- to 14/6; Alfristons, 10/- to 12/6; Ribstons, 9/6 to 11/-; some very wasty, 6/- to 7/3; Prince Alfred, 11/- to 11/6; Mobbs, 7/6 to 10/6; others, 7/6 to 8/6.

Ex the "Maloja."

The "Maloja's" Tasmanian Apples generally, were good, but many Ribstons and Cox's were affected by bitter pit. Demand is improving. Scarlet's realised 9/- to 10/6 per case; Alfristons, 10/- to 13/3; Cox's, 8/- to 14/-; Ribstons, 7/9 to 10/6; Cleopatras, 9/- to 11/-; Dunns, 11/-; Reinettes, 7/- to 10/9; Alexanders, 8/6 to 10/-; Duke of Clarence, 8/6 to 11/-. Some Pears were very wasty. Boscs in half cases realised 3/6 to 5/-; Clair Geau, 3/3 to 4/3.

Victorian Pears were frozen, and were unsalable, but sound fruit was selling well. Boscs, in cases, brought 22/-; Packhams and Howells, 18/- to 20/-; Vicars, 14/- to 15/-; Clair Geau, 10/- Broompark, Bergamot, 12/-. Victorian Peaches were in good condition, but the variety was entirely unsuitable for this market, being regarded only fit for cooking, and there was no demand.

West Australian Apples realised:—Jonathans, 10/- to 13/9; Dunn's Seed-

lings, 12/3 to 13/6; Delicious, 9/- to 11/9; Cleopatras, 12/9 to 13/-.

Ex the "Ionic."

New Zealand Apples landed from the steamer "Ionic," are in good condition, and much better colored than earlier arrivals. The following prices have been realised:—Jonathans, Delicious, 14/- to 17/- a case; Cox's Pippins, 16/- to 22/-; Dunn's Seedlings, 12/- to 14/-.

Ex the "Ormonde."

The "Ormonde's" West Australian Apples were in good condition. Jonathans brought 11/6 to 14/- per case; Cleopatras, 12/- to 14/3; Dunn's, 12/9 to 14/6.

Ex the "Barrabool."

Of the "Barrabool's" Victorian Pears, a small proportion was frozen and valueless; others had good demand. Winter Cole's in cases realised 13/- to 17/-; Packham's, 15/- to 19/-; Boscs, 14/6; Capiaumont, 9/3 to 11/-; Keiffer's, 13/-, and Vicar's, 10/-; in half cases, Boscs, 6/3 to 7/9; Keiffer's, 4/3 to 5/-; Howell's, 10/3 to 16/-, and Packham's, 9/6 to 10/9.

HULL.

Ex the "Jervis Bay."

Tasmanian fruit, ex the "Jervis Bay," sold at the following rates:—Coxs, 10/3 to 13/9; Alfristons, 10/6 to 11/6; Alexanders, 9/- to 10/6; Ribstons, 9/- to 10/3; Granny Smiths, 12/6; others, 9/- to 10/-.

GERMANY.

Ex the "Port Huon."

"Port Huon's" Apples at Hamburg sold at the following rates:—Cleopatras, 10/- to 17/6, mostly at 11/6 to 13/6; Dunns, 11/- to 17/-, mostly at 11/9 to 15/3; Jonathans, 6/6 to 13/6, mostly at 9/9 to 11/6; Cox's, 10/- to 13/6; King Davids, 10/6; Ribstons, 5/- to 6/-; Adams, 8/- to 8/6. Grapes realised 8/- to 10/-, and a few 30/-. Brokers report that the Apples lacked color, especially Jonathans, consequently they were very difficult to sell, buyers preferring American fruit, which was perfectly sound and well colored. In addition, the American fruit pays a duty of only 1/4 per case, compared with a duty of 2/9 per case levied on Australian fruit.

Ex the "Idomeneus."

The Hamburg Apple market was firmer to-day owing to smaller supplies of American fruit. The "Idomeneus's" West Australian fruit generally was in satisfactory condition, Cleopatras and Dunn's being better colored than the first arrivals. Jonathans mostly were green and unattractive. Dunn's realised 14/- to 17/8 per case; Cleopatras, 13/3 to 15/6; Jonathans, 9/9 to 11/9; Cox's, 9/- to 16/6, and Adams, 9/3 to 10/6.

AUSTRALASIAN MARKETS.

New South Wales.

Sydney (16/4/29).

Mr. F. Chilton, City Fruit Markets, reports under date 16/4/29 as follows:—

The general scarcity of Apples this season has caused prices to rise to levels much higher than usual, but has assisted to improve the demand for other fruits. The end of the present Apple season is viewed with much concern, as supplies are likely to be depleted early, and much hardship occur to those in the trade.

Queensland Fruits.—Bananas, 20/- to 32/- per case. Pines, smooth leaf, 10/- to 21/-. Tomatoes, 4/- to 7/- per half case. New South Wales Fruits.—Bananas, Tweed River, 20/- to 32/- per case. Lemons, 12/- to 20/- per bus. case. Oranges, Valencias, 14/- to 22/-. Apples, Jonathan, 12/- to 18/-; London Pippin, 11/- to 13/-; Granny Smith, 12/- to 15/-. Pears, Packham, 12/- to 16/-; W. Cole, 8/- to 13/-. Quinces, 4/- to 8/-. Cucumbers, 6/- to 8/-. Passions, 8/- to 17/- per half case. Grapes, B. Cornichon, 6/- to 10/-; Muscat, 6/- to 12/-; Doradillo, 4/- to 7/-; Ohanez, 4/- to 8/-. Persimmons, 4/- to 7/-. Tomatoes, 4/- to 12/-. Victorian Fruits.—Peaches, 11/- to 14/- per bus. case. Quinces, 5/- to 8/-. Tomatoes, 6/- to 12/-. Tasmanian Fruits.—Apples, Jonathan, 12/- to 16/-; Alfriston, 9/- to 12/-; French Crabs, 12/- to 14/-; Tas. Pride, 9/- to 13/-; Duke Clarence, 9/- to 13/-; Cleo., 11/- to 14/-; Pears, B.B., 4/- to 6/- per half case; W. Cole, 5/- to 7/-; Giblin, 4/- to 5/-.

Victoria.

Melbourne (30/4/29).

The following are the prices ruling at the Western Market:—

Apples, good to choice eating, 10/- to 14/- a case; good to choice cooking, 7/- to 11/-. Green Bananas, Queensland, special, 26/- to 27/- a double case; choice, 24/- to 26/-; standard, 19/- to 23/-; plain, 14/- to 18/-. Grapes, 6/- to 12/- a case. Lemons, 6/- to 9/- a case; few special, higher. Oranges, Victorian, 10/- to 18/- a case; Queensland, 18/- to 20/-; navel Oranges, 16/- to 22/- a case. Passion Fruit, 7/- to 11/- a case. Pineapples, Queens, 10/- to 22/- a double case. Tomatoes, 6/- to 10/- a case; few specials higher; green, unsaleable.

Victorian Central Citrus Association reports that business was slow on the wholesale fruit market yesterday, and merchants state that the effect of the strike is being severely felt. Grapes, good average quality Merbein and Woorinen Cornichons, 9/- to 11/-; Walthams, 10/- to 12/-; Musca-

tels, 9/- to 10/-; O'Hanez, 7/- to 9/-; Doradillos, 6/- to 8/-. A few special lines higher, but a large number sold below the rates quoted. Oranges, special lines, second crop navels, up to 17/-; small, 6/- to 10/-; second crop Valencias, 10/- to 12/-, an occasional special higher; sound Queensland Oranges, 20/- to 22/-. Lemons were hard to sell at 8/- to 9/- for best; others sold down to 5/-.

South Australia.

Adelaide (27/4/29).

Apples, Jons., 12/- to 14/- per case; Cleos., 12/-; eating, 12/- to 14/-; cooking, 10/-; Bananas, 33/- to 36/-; Figs, 10/- to 12/-; Grapes, dark, 8/- to 10/-; white, 8/- Muscates, 8/-; Lemons, 8/-; Melons, sweet, 10/- to 12/- per cwt.; Water, 5/-; Nuts, Almonds, 10/- per dozen lb.; Oranges, 12/- per case; Navel, locals, 16/-; Peaches, Clingstone, 9/- to 10/-; Pears, eating, ripe, 8/-; Plums, dark, 8/-; Quinces, 3/- to 4/-. Fruit prices are without cases.

West Australia.

Perth (18/4/29).

Apples, Jonathans, flats, 5/- to 9/-, special to 13/-, others from 3/-; dumps, 5/- to 12/6; Dunn's, 5/- to 8/-, others from 2/6, dumps 6/- to 10/6; Granny Smiths, 8/- to 11/6, special to 14/3, others from 6/-, dumps, 8/6 to 12/-; Cleopatras, 3/- to 6/-, special to 9/-, dumps 3/- to 10/-; Delicious, 7/- to 13/-, special to 16/-, others from 6/-, dumps 7/- to 10/6; Pears, Bartletts, 6/- to 10/-, special to 14/-, others from 1/-; other varieties, 2/3 to 6/-, special to 10/-; Oranges, Valentias, 14/- to 21/-, others from 7/-; Navels, 7/- to 12/6, special to 19/-; new season's, 11/3 to 20/6; Lemons, 8/- to 12/6, special to 15/-, others from 5/-; Quinces, 2/6 to 8/3, dumps 4/6 to 6/6; Grapes, open, white, 5/- to 10/3; colored, 5/- to 14/-, closed 3/6 to 7/-; Passion, 7/- to 16/-, half dumps 5/- to 10/6.

Queensland.

Brisbane (20/4/29).

Local Fruit.—Lemons, colored, 8/-; others 4/- to 6/- a quarter-case; local, 3/- to 5/-; Limes, 3/- to 5/- a quarter-case; Oranges, common, colored, 12/- to 14/- a bushel case; others, 8/- to 10/-; navels, colored,

15/-; others, 10/- to 13/-; Mandarins, 10/- to 17/- a bushel case; Passion Fruit, 5/- to 11/-; Grapefruit, 3/- a quarter; Custard Apples, 4/- to 6/- a quarter; Papaws, 6/- to 9/-, and 3/- to 5/- a bushel case; Apples, eating, 12/- to 17/- a bushel case; G.S., 14/- to 17/-; Pineapples, rough, 10/- to 14/- a case; Grapes, G.C., 3d. to 5d. per lb.; local P.C., 1/- a lb.

Imported Fruit.—Lemons, N.S.W., 20/- to 22/- a bushel case; Vic., 20/-; South Aust., 26/-; Italians, 27/- to 28/-; American, £2 to £2/3/- a double case; Oranges, N.S.W., 18/- to 20/-; Tas. Apples, Jon., 15/- to 16/- a bushel case; S.P.M., 14/- to 15/-; T.P., 14/- to 15/-; D., 10/- to 14/-; R.P., 11/- to 13/-; K.D., 14/- to 15/-; F.C., 13/- to 15/-; Cleo., 14/- to 15/-; A.L.F., 12/- to 13/-; W.P.M., 13/- to 15/-; L.I.S., 11/- to 13/-; small Apples, 11/- to 13/-; Pears, Tas. W.C., 16/- to 17/-; G.S., 15/- to 16/-; D., 12/- to 14/-; B.D., 12/- to 13/-; B.C., 12/- to 14/-; B.D.C., 14/- to 15/-; T.B., 15/- to 16/-; Pears, Vic. Kees, 9/- to 12/-; W.C., 13/- to 16/-; Vic. Apples, F.C. (green), 12/- to 13/-; Jon., 15/- to 16/-; small, 12/- to 13/-; Del., 12/- to 14/-; Grapes, Leeton, white, Oh., 12/- a case; black, Corn., 13/- to 14/-.

New Zealand.

Dunedin (18/4/19).

Messrs. Reilly's Central Produce Mart reports prices ruling as follows:—

Apples, choice Cox's, 12/6 to 14/-; Delicious, 9/- to 10/6; Jonathans, 7/- to 8/6; others, 5/- to 8/-; cooking, 5/- to 7/-; Dessert Pears, Capiaumont, dumps, choice, 4/-; Beurre Bosc, 6/-; Conference, choice, 8/-; Winter Coles, 6/-; inferior, 2/- to 4/-; Winter Nelis, 9/6. Cape Gooseberries, choice, 7/-; damaged, 1/-. Passions, 9/6. Navel Oranges, 35/- to 37/6. Lemons, Missions, 38/- to 40/-. Grapefruit, 36/- to 38/-. Bananas, ripe, 30/- to 35/-.

S. AUSTRALIAN MARKET GARDENERS AND FRUIT-GROWERS.

An Appreciation.

In our last issue appeared an article by Mr. Fred. Charlick, of Adelaide, appreciating the splendid service to the State by the market gardeners and fruitgrowers.

As the last few lines of the article were omitted, it only remains to be noted that they referred to sturdy, self-reliant characters which had thus been developed.

Gratitude has been expressed because of the kindly references in the article to the untiring efforts of these pioneers.

-LEMONS-

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Production Methods in the Mildura District.

Some Recent Changes.

(By A. V. Lyon, M.Ag.Sc., Officer in Charge Commonwealth Research Station, Merbein.)

THE season 1928-29, from the point of view of production, has been remarkably successful. Details are not yet available, but it is apparent that acreage yields will approximate two tons in the settlements of Red Cliffs and Merbein, while yields on the older vineyards in Mildura are also well above the average.

Quality also is well to the front, and recent advices indicate a record in this respect. Acreage production during the past ten years has shown a remarkable advancement. While some of this is undoubtedly due to minor plantings, it is also certain that improved methods are largely responsible. A review of recent changes in routine methods will prove of interest.

Irrigation Methods.

A recast of the community methods has in general tended to more frequent irrigations, and to more attention to the needs of the plants at critical periods. In particular, the

introduction of an August irrigation (before bud-burst) in dry seasons, and a closer approximation to the requirements of the plants at critical periods, such as fruit-setting and ripening, are steps in the right direction, especially as a series of dry seasons are being experienced. The "yellowing" and wilting of some leaves through lack of water in the growing season was too often in evidence in former years. There has been almost a total absence of these features in recent years, and there is no good reason why they should be allowed to recur.

While recognising these advancements in regard to the frequency of, and periods for, irrigation, it is regrettable that methods of irrigation are not advancing at a rate commensurable with their importance.

Recent investigations indicate that water far above the optimum is still applied by the majority, and improvement in this respect might be considered one of the most pressing needs

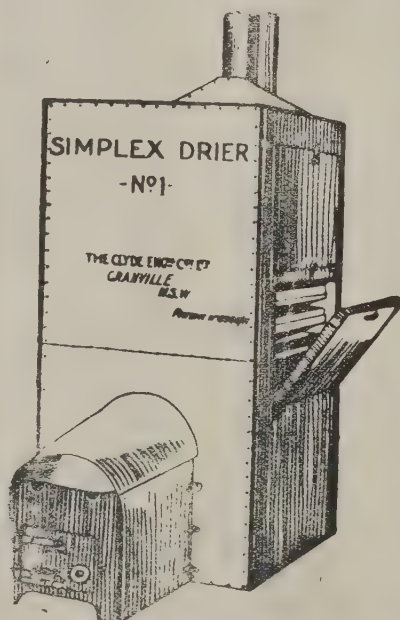
of our irrigated lands. It is particularly necessary on the sandy loams of the newer settlements if future trouble is to be minimised.

Cultural Operations.

The chief changes are a tendency to earlier and deeper ploughings at the commencement of the season's operations, and in general, a deeper tilth throughout the growing season. Summer ploughings, up to 4 inches, are regularly practiced by many growers. Cultural operations are in dry seasons largely influenced by irrigation practice, and one important indirect effect of early watering is to make possible the establishment of a deep satisfactory tilth early in the season. As the early portion of the season is the period of most rapid growth, the importance of attention to the land prior to this period cannot be over estimated.

Fruit Processing.

The light-colored Sultanas favored in the overseas market are steadily increasing in proportion to the total packs. As we are dependent on sun-drying, setbacks such as occurred in the unfavorable season of 1928, must still be expected when similar conditions recur. The introduction of potassium carbonate with emulsified olive oil as a cold dip, or incorporated in the temperature dips is consist-



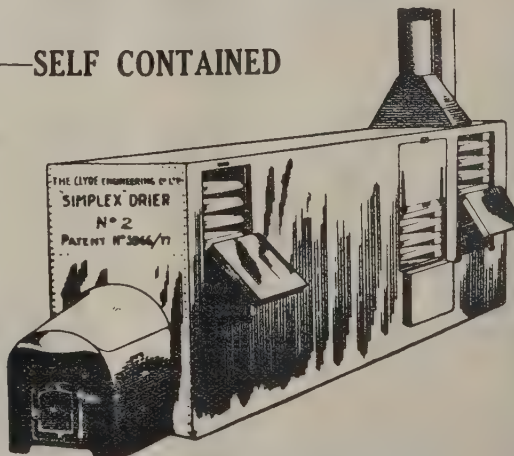
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GRANVILLE, N.S.W.

ently giving lighter colored fruit. Decided advancement has also been secured by decreasing the temperature of the caustic dip. The task of changing the methods of the many thousands of viticulturists is proving lengthy, and the difficulties associated with the transition period are not yet overcome.

The Zante Currant.

Objections from London in regard to the proportion of "foxy" berries are less frequent than usual. This

is to some extent due to favorable seasons. Recent investigations have shown conclusively that a considerable reduction in the percentage of red berries can be secured by pruning methods, the characteristics of the Currant bunch being largely influenced by the type and size of the bearing shoot. Though poor quality is certain to recur in a proportion of the pack in an unfavorable season, it should be recognised that red berries in normal seasons are chiefly due to faulty pruning practice.

Conclusion.

All things considered, it may be stated that production methods are showing a steady and permanent improvement, and at the present time, are completely over-shadowed in importance by marketing difficulties.

While recognising that many problems remain unsolved, improvements in acreage production and quality during the next few years are more likely to accrue by raising the general average standard of the work, than by any radical change in method.

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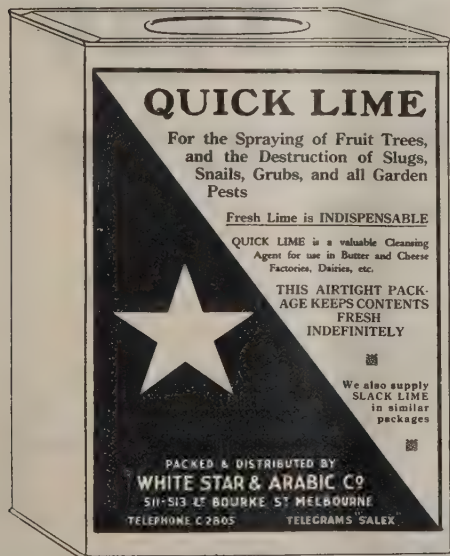
by the Hydro Vacuum process, Australian Dried Fruit could be so treated, and sent out in sealed containers to prevent re-infection. With such delightful, clean fruit, public confidence would be gained, resulting in mutual satisfaction and bigger trade. The old-time fumigating system has been rendered obsolete

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is in operation at the Company's works, Ingles-street, Port Melbourne. The penetration of the lethal gases is complete, without opening cases or cartons. Further, the goods are in no way harmed. Full information is contained in a descriptive booklet obtainable free on request. This contains report of demonstration on September 4, before Federal and State Government officials.—Write for your copy now. The Hydro Vacuum Fumigation Co. Ltd., officially registered as a Quarantine Station by the Plant Quarantine Department. Works: Ingles-street, Port Melbourne. Office: Temple Court, Collins Street, Melbourne, C.I. Phone: Central 2670.



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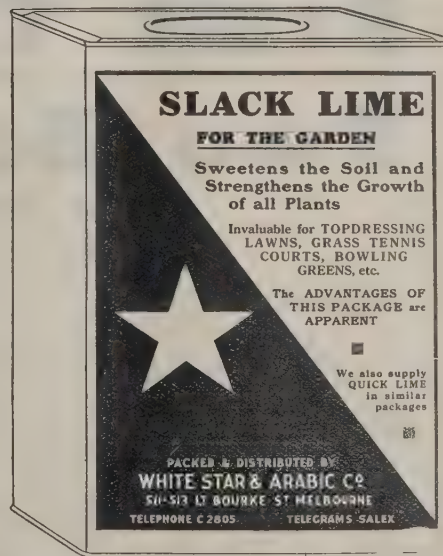
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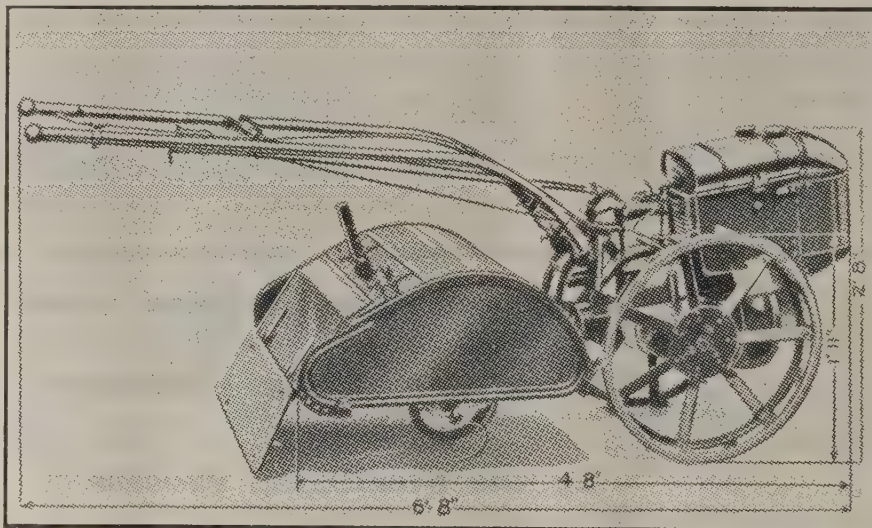
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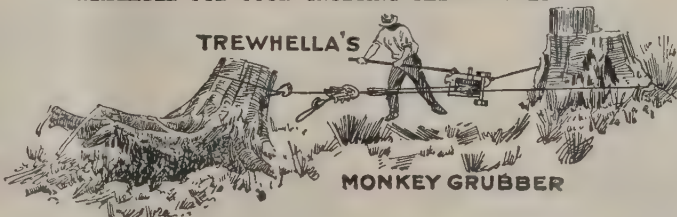
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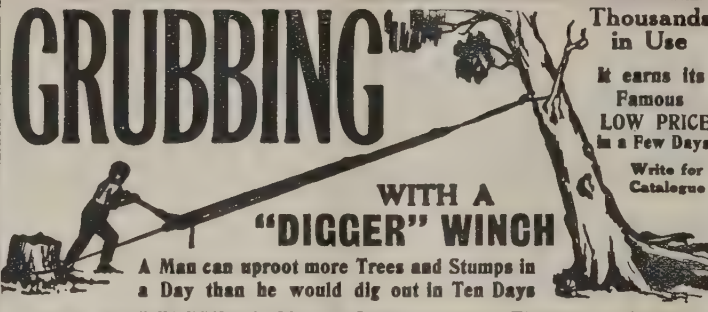
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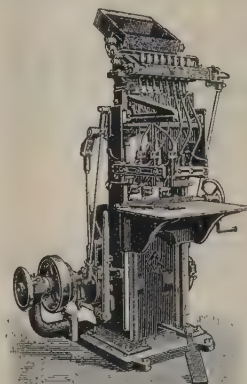
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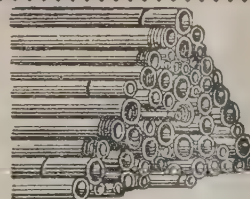
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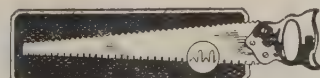
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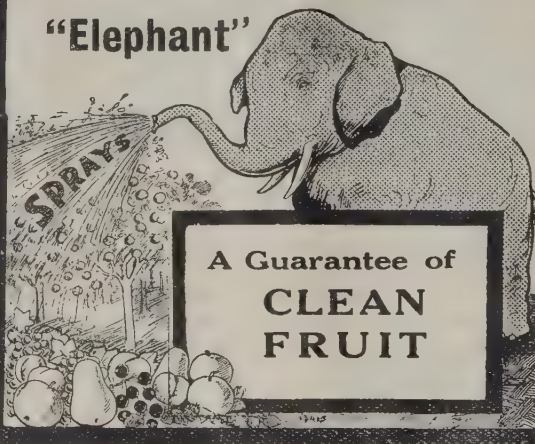
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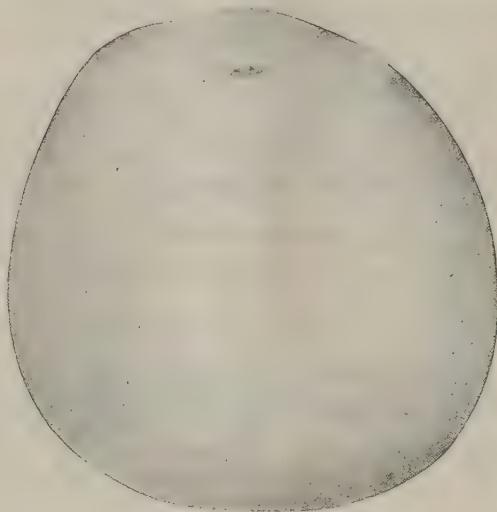
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Representing the Deciduous, Citrus and Dried Fruits Industry of Australasia.

Published the First of Each Month.

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It's what you think that makes the world

Seem sad or gay to you;
 Your mind may color all things gray
 Or make them radiant hue.
 Be glad to-day, be true and wise,
 Distinguish gold from dross;
 Waste neither time nor thought about
 The bridge you'll never cross.

There's useful work for you to do,
 For hand and brain and heart;
 There's urgent human service, too,
 In which to take your part.
 Make every opportunity
 A worth-while gain, not loss;
 The best is yours, so do not fear
 The bridge you'll never cross.

If life seems drab and difficult,
 Just face it with a will;
 You do not have to work alone
 Since God is with you still.
 Press on with courage toward the goal,
 With Truth your shield emboss;
 Be strong, look up and just ignore
 The bridge you'll never cross.

—Grenville Kleiser,

Fruit Tree Pruning Keeps Growers Thinking

Pruning and its Relation to Crop Equalisation.
Australian Experiences Compared with U.S.A. and South Africa.
Competitions in N.S.W.

THERE have been many hundreds of opinions on pruning methods expressed in writing from time to time, but only those who endeavor to propound their views on this subject fully appreciate the limitations of the written word to deal with it adequately. The practical man, who really has the knowledge invariably finds it almost impossible to do justice to a subject which of all the orchard practices really needs field demonstrations carried over a period of years to bring conviction to the student.

It is fairly safe to say that this most important operation is treated altogether too casually by the average grower. Too many are prone to delegate the bulk of this work to inexperienced labor, with the result that no uniform system can be faithfully carried out.

Whenever possible, pruning should be conducted by the same person on the same trees year after year, so that the results of a definite policy can be demonstrated.

The position has now been arrived at where we must produce a crop of uniformly good quality fruit. Competition has become so keen in all markets that a high yield of first quality fruit is necessary if we are to hold our position and meet this competition, and although good packing and clean packages are important, the prime necessity is the

quality of the goods

which we put into the package.

To attain this result, every part of orchard practice must be thorough, and pruning is one of, if not the chief, of these.

Heavy manuring and good cultivation can be nullified if the trees have not been intelligently pruned to meet the demands which the following crop will make on the trees.

With regard to Apples, particularly in Victoria, where the normal course of production has been sadly interfered with by a thrip visitation two seasons ago, the very greatest caution needs to be exercised to attain the maximum of achievement both in fruit production and the furnishing of the trees with fruit buds for the following season.

There has been some publicity recently in reference to this most im-

portant matter. No doubt, suggestions on this subject are made in the best of good faith, but before adopting a drastic policy of the reduction of fruiting spurs, such as has been advocated, a careful survey of the whole position is necessary, and a thorough study of the conditions of the trees needs to be considered.

Trees that are healthy and have had good cultivation and have carried no fruit this year will be full of vitality, the buds will be forward, and the trees will show the appearance of anxiety to get to work and make up for lost time; a too drastic thinning of the bloom on such trees will carry the risk of again upsetting the balance of nature and forcing a wild growth of wood.

Many growers must have at times seen this result, to their cost, and the greatest care will be necessary to avoid making this mistake.

At the same time, if nothing be done, there is every probability that the resultant crop would be small in size. It therefore looks as though

a moderate thinning

of the bloom during the pruning would be wise, and after the fruit has set and the first shedding has taken place.

If the crop is still heavy, the only procedure is to thin the fruit on the trees. This policy has been adopted by many growers of the Yates variety of Apple, with excellent results, and there is no reason to believe that equally satisfactory results in crop equalisation cannot be obtained with other varieties provided the thinning is taken in hand early enough.

There is, of course, the additional cost involved in doing this work, but what of the result? A very high percentage of choice fruit and a much greater chance of a crop for the following year than by any other method.

This result, if attained, would certainly justify any reasonable expenditure, and growers would be well advised to give it serious consideration.

Pruning generally is the logical working with nature

to assist the trees to give the best results possible, but only too often is the reverse effect attained by following some theoretical, impossible idea in an endeavor to defeat nature's intention,

In some countries there are advocates of no pruning after the tree has been built up, and illustrations and results of this procedure may seem to justify this system, but many vital factors have probably not been disclosed, particularly with regard to the class of land on which the trees are grown, the age of the trees, the average annual rainfall, etc., etc., all of which have a most important bearing on the subject.

Naturally trees in their youth grown on rich flat land with a good rainfall would be sure to make a showing, even without pruning, but the average quality of the Apple country of Victoria, at least, is only fair to medium, and trees left unpruned would rapidly run out to weedy, willow wood, and lose their vitality. However, the "Fruit World" would like to have those of their subscribers who are interested disclose their views on this most important question, and by open discussion much of advantage to all may be brought to light.

PRUNING COMPETITIONS IN N.S.W.

Certificates for Competency.

THE Department of Agriculture in N.S.W. is to be congratulated on having arranged a series of competitions in pruning in co-operation with the Agricultural Bureau or branch of the Fruitgrowers' Federation as follows:—June 5, Lavington; June 12, Batlow; June 19, Wingello; June 26, Bathurst; July 2, Griffith; July 4, Leeton.

The Department has arranged for judges, and will issue certificates of competency in pruning to such candidates as shall be awarded not less than 80 per cent. of the maximum points provided for in the scale of points.

Details are as follows:—

1. Competitors will be required to prune one bearing and one non-bearing tree (or more at the discretion of the Committee) of each variety included in district competition.
2. The time allowed for each class is determined by the local Committee after examination of the trees to be pruned. All competitors are required to cease work on expiration

of the time allowed. In the event of two or more competitors gaining equal points in any one class, the competitor who finishes his work first will be awarded first position.

3. Judges will allow points to each competitor in accordance with the scale of points as set out below (maximum 100 points):—

Peach.—Selection and treatment of fruiting wood, 40 points; selection and treatment of leaders and shaping of trees, 40; clean cutting, 20.

Apricot.—Selection and treatment of fruiting wood, 50 points; selection and treatment of leaders and shaping of trees, 35; clean cutting, 15.

Pear, Plum and Apple.—Selection and treatment of fruiting wood, 45 points; selection and treatment of leaders and shaping of tree, 45; clean cutting, 10.

Vine Pruning.

1. In these classes, each competitor will be required to prune—(a) five spur pruned vines; (b) five rod and spur pruned trellis vines.

2. Competitors are required to secure the rods in the case of the trellis vines.

3. Time allowed in each class will be governed by same conditions as for fruit tree pruning class.

Scale of Points.

The judges will allow points to each competitor in accordance with the tables set out below (maximum 100):—

Bush and Spur Pruned Vine.—Selection of fruiting wood, 40 points; shaping of vines, 30; clean cutting, 30.

Rod and Spur Pruned Trellis Vine.—Selection of fruiting wood, 40 points; shaping of vines, 30; clean cutting, 20; tying the canes, 10.

Further details are obtainable from C. C. Crane, organiser, Agricultural Bureau of N.S.W., c/o Department of Agriculture, Sydney.

Apple Tree Pruning Tests.

Australian Experience Compared with U.S.A. and South Africa.

APPL E TREES require comparatively little pruning for best results, while training the trees to a low-headed habit of growth has decided advantages over the system that results in high-headed trees, according to a report by G. H. Howe, horticulturist at the experiment station at Geneva, N.Y. (U.S.A.). Mr. Howe has conducted pruning experiments with Apples for a number of years, and has accumulated much information on this subject, some of which is now available in a station bulletin, which may be had free of charge for the asking.

Such well-known standard varieties as Baldwin, Esopus, Hubbardston, McIntosh, Spy, Greening, Rome, and King have been used in the station's pruning tests. The comparison of little and much pruning was made with trees all headed about two feet above the ground when set out in the orchard. It was found that after the tree is properly started, little pruning will later produce a tree with a larger head, having a greater bearing area, with less effort on the part of the orchardist than will much pruning. This condition developed in about ten years in the station experiments, and the trees maintained equally as good shape and symmetry. This applies to all standard varieties of Apples.

With regard to high and low heading of Apples, the station tests showed that the root systems of the low-headed trees were more firmly established in the soil and thus offered

greater resistance to wind that in the case of the high-headed trees. This should be an important advantage, especially in exposed locations. The low-headed trees were also much larger and stockier in the trunks and branches and had larger heads with a greater bearing area than did the high-headed trees.

Commenting on the foregoing, Mr. J. H. Lang, Harcourt, Vic., writes:—

I was very interested in this article, and would be pleased to read the bulletin when it arrives. The results obtained by Mr. G. H. Howe are in accord with those of O. S. H. Rimecke, of S. African Department, set out in Bulletin No. 43 (1928).

It has been recognised in U.S.A. that hard pruning has a dwarfing effect on the tree, and as hard pruning of young trees has been in vogue for many years in Victoria, this may account for trees of later planting not reaching the same size as those that were planted in the early days. (Some growers blame spy stocks for this.)

Little or no pruning after the tree has been formed opens up a new avenue for experiment for Victorian growers, and one that is well worth investigating. I know of young trees in Harcourt that have been kept back through over-pruning.

"FRUIT WORLD ANNUAL."

We compliment you on the production of the "Fruit World Annual." It is full of information, and every grower should have it.—(Signed) W. J. Kimber, Secretary, S.A. Fruitgrowers and Market Gardeners' Association, New Market, Adelaide, S.A.

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Standardised Packing of Oranges and Lemons

Proper Packing Pays.

Standardisation Simplifies Selling.

THE STEADY IMPROVEMENT in the art of packing Oranges and Lemons in Australia encourages the belief that before long the standardised packs will form the bulk of the supplies on the markets of Australia and New Zealand.

In issuing a wall chart to demonstrate citrus packing, the Victorian Department of Agriculture has rendered good service to the industry. Demonstrations on citrus packing have been given throughout the State by the fruit-packing expert, Mr. B. Krone.

The following information and details are republished from the chart

issued by the Department, and will serve as a valuable guide to growers and packers:—

Remember.

The outside layers should be a true indication of size and quality throughout the case.

It is the size of the pocket that regulates the height of the fruit.

The correct placing of the first layer is the most important factor in securing correct height.

The second and alternate layers in each pack must not rest directly on top of fruit beneath, but in the spaces.

No two fruits rest directly on top of each other in any direction (see illustration of packed case).

Sizing and packing should be treated as two separate operations.

The diameter of the fruit is measured from cheek to cheek, not from stem to eye.

Stencil cases true to name, quality, number, and size.

From orchard to shed, at every step, handle fruit with great care.

Don't nail down on the bare floor; place battens beneath (see illustration).

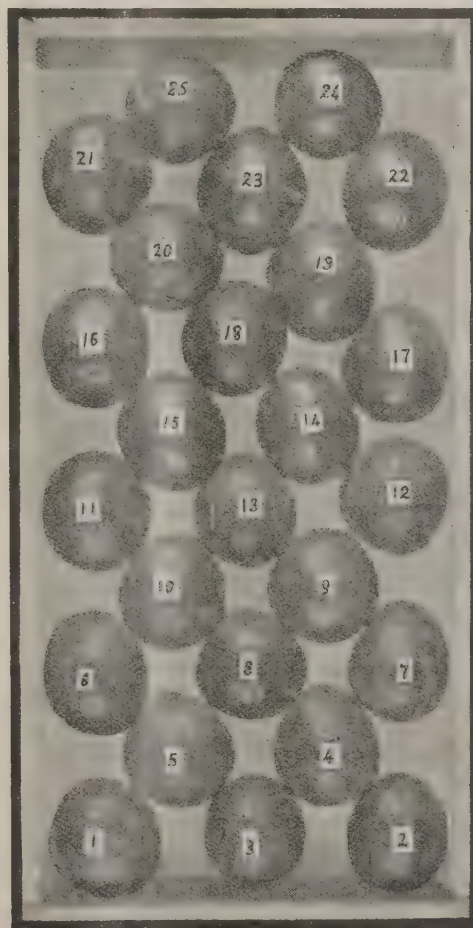
The numbers on the illustrations

Oranges packed in Australian case (inside measurement 18in. x 8 2-3in. x 14½in.—2,223 cubic inches).



3-inch 2-2 Pack. 5 x 4 Layer.

Note.—There should be 7 layers in the case, and the total count 126.



2½-inch. 3-2 Pack. 5 x 5 Layer.

Note.—There should be 8 layers in the case, and the total count 200.

indicate the rotation in which the fruit is placed in the first layer.

Do not walk or sit on packed cases; cases so used may be opened by the agent to sell the whole consignment.

Make cases uniform, neat, attractive, inviting.

Use every effort to establish a reputation for your fruit. Attention to details pays handsomely.

Slack packing results in bruised fruit.

A retailer purchasing a case of fruit with a number of inferior specimens included is compelled to raise the price on the remainder to secure his profit, the increase in price to the consumer tends to decrease consumption, therefore it is a decided advantage to pack fruit to grade.

Handle fruit as carefully as eggs.

STANDARDISED DIAGONAL "CHEEK" PACK.

ORANGES IN AUSTRALIAN CASE 18 in. x 8-2/3 in. x 14 1/2 in. (inside measurement).

Size.	Name of Pack.	Description of Layer.	No. of Layers.	Total.
2 1/4 in.	3-2	6 x 6	8	240
"	3-2	6 x 5	8	220*
"	3-2	5 x 5	8	200*
"	2-2	7 x 7	7	196*
"	3-2	6 x 5	7	193 (Comes low)
2 1/2 in.	2-2	7 x 6	7	182*
"	3-2	5 x 4	8	180 (Use 182 count instead)
"	3-2	5 x 5	7	175*
"	2-2	6 x 6	7	168*
"	3-2	5 x 4	7	158*
"	2-2	6 x 5	7	154 (Use only for very large fresh 2 1/2 in., or small sweated 2 3/4 in.)
2 3/4 in.	3-2	4 x 4	7	140 (Use only if cases are cut wide)
"	2-2	5 x 5	7	140*
3 in.	2-2	5 x 4	7	126*
"	2-2	4 x 4	7	112*
"	2-2	5 x 4	6	108 (Comes low)
3 1/4 in.	2-2	4 x 4	6	96*
"	2-2	4 x 3	6	84*
"	2-1	6 x 5	5	83 (Comes low)
"	2-1	5 x 5	5	75*
3 1/2 in.	2-1	5 x 4	5	68*
3 3/4 in.	2-1	4 x 4	5	60*
"	2-1	4 x 3	5	53*
4 in.	2-1	3 x 3	5	45*

*Indicate packs to adopt that will bring the fruit to the "right" height in the case and which would be the most commonly used in a packing shed. The other counts, however, are sometimes used. This depends upon the sweating of the fruit and how the cases have been cut.

Note.—Don't confuse the 112 count with 96 count when packing 3 in. Oranges.

Special Note re 154 Count.—This pack is only suitable for large 2 1/2 in. Oranges fresh from the tree, or small 2 3/4 in. Oranges that have been "sweated" for some time. For instance, a case of 140 count, packed fresh from the tree would re-pack after sweating as 154 count.

Remember.—Use the 196 instead of the 193 count.

" 182 " " 180 "
 " 112 " " 108 "
 " 84 " " 83 "

STANDARDISED LEMON PACKS.

Size.	Name of Pack.	No. of Layer.	Total.	Size.	Name of Pack.	No. of Layer.	Total.
2 in.	3-2	6 x 5	9	248 2 1/4 in.	2-2	5 x 5	7
"	3-2	5 x 5	9	225	2-2	5 x 4	7
2 1/4 in.	3-2	5 x 4	9	203 2 3/4 in.	2-2	4 x 4	7
"	3-2	4 x 4	8	160	2-2	4 x 3	7
"	3-2	5 x 4	8	180 3 in.	2-2	3 x 3	7
"				"	2-2	4 x 3	6

The Australian Citrus Industry

Successful Interstate Conference at Melbourne.

THE annual Interstate Conference of citrus growers was held at Melbourne from May 7 to 9. Delegates attended from Victoria, New South Wales and S. Australia. Mr. A. W. Schwennesen, Chairman of Directors, Victorian Central Citrus Association Pty. Ltd., presided.

In introducing the Minister of Agriculture (Mr. Pennington) to open the Conference, the Chairman urged that the Compulsory Citrus Levy Bill be introduced into Parliament and

that the Western Market be moved to the Victoria Market.

Hon. J. W. Pennington, M.L.A., Minister for Agriculture, said that it would be difficult to get the proposed Citrus Levy Bill through both Houses. The Paterson butter scheme had benefited the dairy industry, though it had cost the public £7,000,000. Bud selection was very important, and the Department had sent 1,496 bud selection cards to 1,300 growers, who were asked to mark the trees bearing special quality trees over four years. Since fumigation had been inaugurated by the Department in 1924, 1,640,000 trees had been fumigated with 97 per cent. efficiency. An amendment of the Farm Produce Agents' Act was drafted, it being necessary to legislate against unscrupulous persons. Growers should advertise their industry: fruit was rarely seen on the tables of the country and other hotels. One happy exception was the hotel at Renmark, South Australia.

A vote of thanks was carried, at the instance of Mr. J. A. Parkes, South Australia.

Reorganisation Proposals.

Mr. D. J. Walters (Murrabit) submitted a resolution favoring reorganisation. He would correct the suggestion that his members were out to break the Association: they believed in organisation and co-operation, but the V.C.C.A. did not include fifty per cent. of the growers. There was need for an Australian-wide Citrus-growers' Association, but this would be impossible till Victoria put her house in order. The State should be divided into convenient geographical districts, each district to elect its own representative on the Board of Directors, the Board to meet at least once every three months.

Mr. C. V. Rees (Long Lake) seconded.

Mr. P. Cobbett (Bamawm) opposed the resolution. Directors should be chosen on their ability to serve the industry. A large unwieldy directorate was undesirable.

Captain Halhed (Merbein) said he approved of the resolution in principle, but it would be too expensive to finance.

Mr. B. S. B. Cook (Secretary and Manager) stated the V.C.C.A. was

stronger than ever, starting with 10 districts, they now had 22. The accredited agents returned on the average prices equal to the outside agents. Growers should not be influenced by propaganda of certain vested interests. One weakness was that district Secretaries could not spare the time to keep individual growers informed of what the Association was doing.

Mr. R. McKenzie (Curlwaa, (N.S.W.) said it would be a mistake to unduly enlarge the directorate: better organisation was needed in the districts.

Various delegates stated that the grouping plan outlined by Mr. Walters was not acceptable. Each district would require its own representation.

Mr. Walters said that by giving growers more voice in the management a larger number would be brought in, and this would provide any additional finance needed.

Mr. G. Mussen (Director, V.C.C.A.), opposed the resolution. He suggested that Mr. Walters try the grouping plan in the Murrabit-Koondrook-Barham district, and that on its working out satisfactorily the other districts might be convinced.

The Chairman said the V.C.C.A. handled 69 per cent. of the fruit from Victoria and N.S.W. border.

The motion was lost, only the mover and seconder voting for it.

Fumigation.

On the motion of Mr. Walters (Murrabit), it was unanimously decided—

"That the State Rivers and Water Supply Commission be asked to co-operate with the Agricultural Department in financing the fumigation of all groves when in the opinion of the Orchard Supervisor it is necessary."

Mr. Wormwell (Merbein proposed):—"That a scientist be appointed through the Development and Migration Commission on questions of fumigation." He said fumigation was costly and unsatisfactory.

Mr. S. A. Cock (Government Citriculturist) said that fumigation had reduced red scale from 60 per cent. to 15 per cent. The cost varied from 1/5 to 5/- per tree; the average was 2/2½. Many growers neglected to spray infected vines with scale-cides, and this caused re-infection of the citrus trees. A low humidity was necessary for effective fumigation. In most cases fumigation every two or three years was satisfactory, but spraying should not be neglected. White oils were being used effectively.

Mr. W. McGregor (Shepparton) said it cost him £150 to fumigate his citrus grove, but only £30 to spray with a white oil, which effectively controlled red scale.

The resolution was withdrawn.

Citrus Red Spider.

On the motion of Mr. C. V. Rees, it was decided to ask the Department of Agriculture to carry out research into the red spider pest occurring in the citrus groves of the North.

New Levy Adopted.

A lengthy discussion took place on the Board's proposal for a levy of 2½ per cent. on the gross amount received for the fruit as a substitute for the previous levies of 2d. and 3d. per case.

The Chairman said the Board proposed to give a rebate of ½ per cent. of the 2½ per cent. levied. The new system would be tried for one year.

Mr. G. Mussen said the new proposal was the result of seven years' experience. The bigger the turnover the greater the revenue. The Association expected to handle more fruit this year, possibly a conservative average would be 10/- per case. The resolution was carried.

Compulsory Citrus Levy.

Conference adopted a further resolution requesting the State Government to introduce a Compulsory Levy Bill to provide a levy on all citrus fruit produced and sold in Victoria.

In reply to Mr. Parkes, the Secretary (Mr. Cook) said that if constitutional difficulties could be overcome the proposed citrus levy would apply to all citrus fruit marketed in Victoria.

Mr. Parkes: "This may introduce complications."

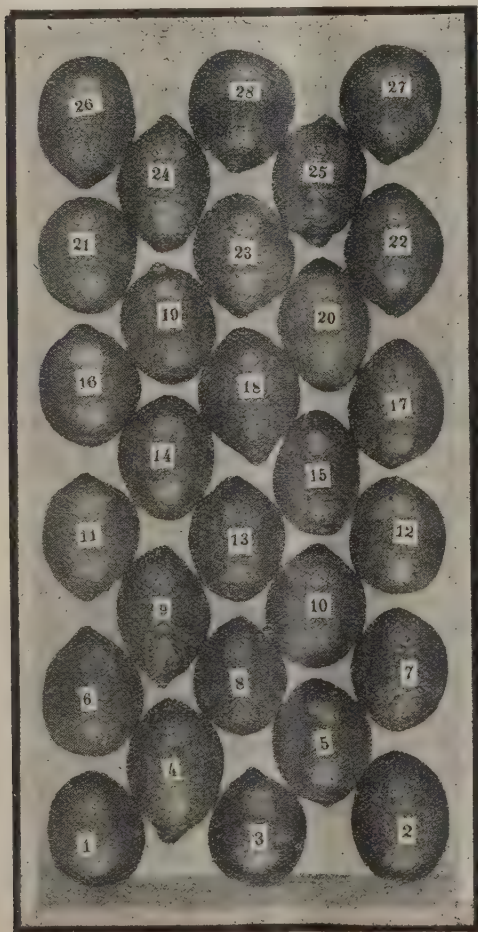
Mr. Cook: "I am sure an equitable arrangement between the States can be made."

Market Representative's Report.

This was presented by Mr. G. E. Kitchen Kerr, and adopted. The report is published elsewhere in this issue.

Case Timber.

Mr. Walters (Murrabit) moved that Conference press for a reduction of duty on imported shooks. Mr. Cobbett (Bamawm) seconded.



Lemons packed in Australian bushel case, 18in. x 8 2-3in. x 14½in. inside measurements. Lemons 2in. diameter, 3—2 pack, 6 x 5 layer. Note.—The last Lemons in each layer are reversed in order that the bottom or stem end comes in contact with the end of the case, and not the delicate point of the Lemon.

Mr. J. A. Parkes (S. Aust.) said the South Australian Forest Department made good cases for dried fruit and citrus from local *Pinus insignis*, at a cost no greater than from imported timber.

Mr. H. G. Such (N.S.W.) said N.S.W. depended largely for cases on the other States. The duty on imported cases cost his growers £5,000 last year. This was a totally unnecessary charge on the industry. The motion was carried.

Uniform Case.

Mr. Cook, on behalf of the Board, proposed "that a uniform case be used for the Australian trade, and that uniformity be secured as far as possible in regard to the export case."

There were too many different sized cases in use.

Mr. Rees said that cases absorbed 12½ per cent. of the growers' gross takings. He favored the 1½ bushel case.

Mr. B. Krone (Packing Instructor, Department of Agriculture) read a paragraph from the "Fruit World," wherein the South Australian Agricultural Department was reported to be adverse to the Canadian (standard) case, on the grounds that it did not hold a bushel. This idea, continued Mr. Krone, was wrong. This accepted bushel measurement was 2,223 cub. inches. The standard case, with the minimum bulge at lid, contained 2223.5 cub. inches, and with the maximum bulge, 2273.5 cub. inches.

Case Labels.

Mr. Cobbett moved:—"That once a labelled case is used, the label be completely obliterated before it is used again."

Mr. J. M. Ward (Superintendent of Horticulture) said this point was covered in the regulations as regards true description.

Mr. Such said that in N.S.W. agents cancelled the labels by means of a rubber stamp with three-quarter inch letters.

The motion was carried, and it was decided to take the matter up with the agents.

Orange Maturity Standards.

Mr. Cook demonstrated the method of arriving at the maturity standard in the neutralising of the acid contents.

Mr. J. M. Ward said the request for a definite maturity standard came from the growers in 1924. The color of the skin was not a satisfactory indication. Regulations had been adopted, but it was proposed to interpret them liberally.

While affirming the desirability of maturity standards, it was admitted

by several delegates there was a demand for sour or tart Oranges. Appreciation was expressed for the article in the "Fruit World" outlining the proceedings re maturity standards in South Africa.

Mr. E. E. Meeking (Department of Agriculture) described the maturity testing system. The Californian standard was higher than ours.

The matter was referred to a Committee.

Bud Selection.

Mr. S. A. Cock (Government Citriculturist) said the response from the 1,500 census cards sent to growers had been disappointing. It was no use for growers to have trees which did not pay. Only the best varieties should be grown, and growers should mark the trees which consistently produced the biggest crops of the best strains. He produced specimens of beautifully colored ripe Valencia Oranges, picked at Mildura in April; trees 35 years old, and have borne consistent crops. The fruit remained golden, and did not revert to green. The fruit brought 35/- per bushel. Trees worked with buds of this variety would produce similar fruit. With proper attention to bud selection there should be no need to import citrus into Australia.

With regard to Lemons, a better type was needed. He produced specimens of locally grown Lemons picked five weeks previously, and now a golden-yellow color, firm and juicy. Ninety per cent. of the art of "curing" Lemons was to pick them at the right time and to handle carefully, storing at an average temperature of 50 to 70 degrees.

It was the intention of the Department shortly to appoint a full-time man to carry out the work of bud selection in the growers' interests.

On the motion of Mr. R. A. Black (Nyah), it was decided to express appreciation of the work of the Department and to urge growers to co-operate with the census and every other way.

Agents.

Mr. Walters moved that all fruit agents willing to sign the V.C.C.A. agreements, be appointed agents for the V.C.C.A.

Mr. Williams (Shepparton) seconded. There was an interesting discussion, in which Mr. Kerr, market representative, pointed out that although there were good agents outside the V.C.C.A., to greatly enlarge the number of agents would mean loss of control and probably a rise in commission. This view was supported by Capt. Halhed, Mr. Logan, and Mr. Newton.

Mr. Walters and Mr. Williams contended that by having these good agents outside the V.C.C.A. there was now a big stream of citrus coming on to the market which would not be present if these agents could get V.C.C.A. fruit; further, that growers, particularly in Shepparton, had other fruits which they consigned to agents not in the V.C.C.A., and were unwilling to make a change to the V.C.C.A. limited channels.

It was finally decided to refer the matter to the Board of Directors.

Mr. Logan moved:—

"That the accredited agents of the V.C.C.A. should sell citrus fruits from members of affiliated Associations only." He did not think accredited agents should go looking for business from outside growers.

The Secretary pointed out that on such outside fruit the agent charged 10 per cent. commission and refunded 2d. per case to the V.C.C.A. The motion lapsed.

The Bamawm Association proposed that the agency position in Bendigo be reviewed with a view to either changing the existing agent or increasing the number of agents in Bendigo. Carried.

On the motion of Mr. Hughes, seconded by Mr. Black, it was decided to approve of the appointment of a permanent field organiser.

Export.

Mr. Logan (Nanneella) said that if export to the United Kingdom were not immediately necessary, it would be in the very near future: production was increasing rapidly. He proposed a resolution emphasising the necessity for export and the collection of a compulsory levy as an equalisation fund.

Information regarding experiences in export were given by Mr. Parkes (S.A.) and others, and it was finally decided, on the motion of Messrs. Logan and Williams, to refer the matter to the Board of Directors.

On the subject of borax treatment and the objections of the British Health authorities to foodstuffs containing borax, the Secretary reported that the Council for Scientific and Industrial Research was continuing its experiments with bicarbonate of soda.

Owing to an alleged "citrus" taint to other perishable cargoes in steamers' holds, several shipping companies had refused to carry citrus fruits. It was decided to ask the C.S.I.R. to endeavor to find a remedy. Eggs were known to have been adversely affected. Mr. Hepburn, of the Government cool stores, however, had expressed the opinion that there should be no taint if the holds were properly insulated.

Continuing, Mr. Cook stated that there appeared to be no immediate prospect of substantial developments in the export of concentrated Orange juice to England from Australia, owing to the huge quantities of Oranges being available from nearby Mediterranean countries.

The Rhodesian Fruitgrowers' Co-operative Association had sent a questionnaire requesting many details, which had been supplied. Mr. Cook stated the Board approved of the ideals of the Rhodesian Association in developing a sentiment in favor of preserving Empire markets for Empire fruit.

On the subject of the importation of concentrated Orange juice, the Secretary said the Customs duty was operative on the strength of the concentration and that this protected Australian growers.

Regarding pure fruit drink regulations, these were being revised by the authorities in the several States. Under the Victorian regulations, which had been tightened, all fruit "squashes" or "crushes" must be made from pure fruit. The Association would actively assist the health authorities to detect infringements.

Californian Experience.

Mr. J. M. Ward said the proposal to bring a Californian bud selection expert here had been carefully considered. It was thought, however, that the better plan was to send an Australian to California to study and to bring back ideas which could be adapted to our conditions here.

Mr. Rees spoke in favor of sending a scientifically trained young man to California.

Mr. Such (N.S.W.) said the Griffith Producers' Co-operative Association had done the most practical thing in sending one of their own young men to California to study conditions there. Mr. Vagg had been sent at a cost of £600, and the expenditure had been well worth while.

It was finally decided to recommend the Government to send the State Citriculturist (Mr. Cock) to California to study citrus problems.

State Citrus Nursery.

Several growers gave their experiences in planting citrus trees which had been proved to be not true to name, and it was unanimously decided that the State Government be approached with a view to the establishment of State nurseries for the propagation of citrus trees, and that an officer be appointed to carry on immediately the work of bud selection.

Imported Citrus Fruits.

Mr. Logan (Nanneella) moved in favor of a prohibitive duty on imported citrus fruits. This was opposed by several speakers,

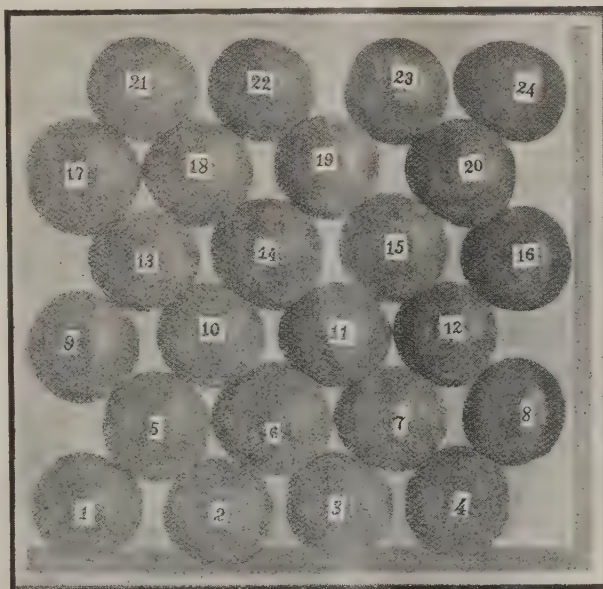
Captain Halhed said that until Australian growers could supply the markets here with citrus throughout the year, they should not oppose importations. It was undesirable for the public to go short of citrus for even one week of the year. In a few years' time there would be an adequate supply of Australian citrus throughout the year.

The matter was referred to the Federal Citrus Council.

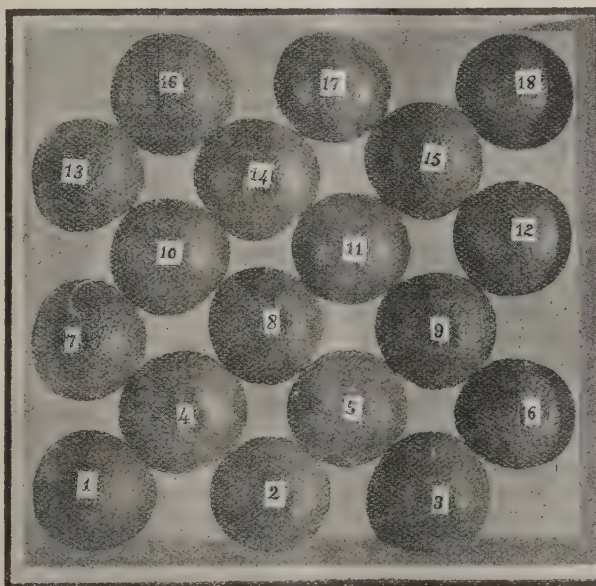
Further Plantings Opposed.

It was also decided that vigorous steps be taken to discourage the further planting of citrus trees until profitable markets are obtained for those already in bearing and those to come into bearing.

Packing Oranges in Californian export case, 23in. x 11½ x 11½ inside measurement, clear of division.



2½-inch. 4-4 Pack. 3 x 3 Layer. 6 Layers. Total, 288.



2½-inch. 3-3 Pack. 3 x 3 Layer. 6 Layer. Total, 216.

CITRUS GROWERS' ANNUAL MEETING.

Sound Position of Association.

Export Fund Created.

Organisation Campaign Favored.

THE annual meeting of the Victorian Central Citrus Association Pty. Ltd. was held on May 10. Mr. A. W. Schwennessen, Chairman of Directors, presided, and delegates were present from Perricoota (N.S.W.), Tongala, Bamawm, Nanneella, Curlwaa (N.S.W.), Cobram, Tresco, Red Cliffs, Nyah, Lake Boga, Shepparton, Murrabit, Merbein, Kyabram, Wangaratta, and Mildura.

Mr. Gerald Mussen (Tresco), one of the Directors, in moving the adoption of the report and balance-sheet, said that the London reports regarding the Victorian Oranges exported to Great Britain referred in the highest terms to the quality of the fruit, which the London agents stated was superior to South African Oranges, and quite able to hold its own against that of California. The difficulty of exporting to the English market was not quality, but the inability of the ships to land the fruit in good condition. If the fruit could be satisfactorily carried overseas, Oranges selected for export would sell well, and the business would be profitable.

While Mr. Clapp doubted the necessity for export, he has apparently overlooked the fact that we had always had a share of export to New Zealand, and in the future in collaboration with the N.S.W. Association we intended to have still a bigger share. The Directors had no doubt of the wisdom of the policy in continuing the endeavor to open and extend export markets.

Since its inception the associated growers had unflinchingly stood for honesty in trading and that at the request of the organisation the Government had been induced to pass regulations penalising growers who by individual laxity or design deceived the consumer. The organisation would gladly co-operate with Mr. Clapp in rooting out any grower guilty of unfair practices. The keeping qualities of all Oranges not only varied according to districts, but also according to the climate of the particular year. The Council for Scientific and Industrial Research was now carrying out extensive experiments with Mr. Clapp's assistance to dis-

cover if possible improved methods for handling and keeping the fruit. While it was admitted that careful handling of the fruit was an important factor, there were other variable factors which materially affected the case. Continuing, Mr. Mussen stated that with reference to the absurd gossip regarding the alleged extravagance of the V.C.C.A., the answer was that last year with the levy increased to 3d. per case the amount of money received from Victoria and border growers by the organisation was approximately £3,000, and, as the balance-sheet showed, the credit balance on the year's operations was approximately £1,600. In achieving this result, the highly efficient staff had, by performing services for other fruit organisations and engaging in other activities, earned for the organisation approximately £1,500.

At the close of the year the company had assets of over £2,500. These included a fixed deposit of £1,000 at the bank and a credit balance of £650 in the company's current account. In addition, the company carried stocks of Sunkist and other juice extractors, valued at £433, all of which had been taken in at a written down price. There were sundry debts due to the company of £400, of which over £300 had been paid since the end of the year. The only debts due by the company amounted to £125, which were ordinary monthly accounts, liquidated since the end of the year.

At the beginning of the year the company's paid-up capital in cash was only £305. The Directors considered that it was in the interest of the growers and the organisations to strengthen the paid-up capital, and for this reason they transferred to capital account £915. The effect of this was that the district organisations who had taken up shares and paid on account of them 10/- each, now held two fully paid shares of £1 each. In other words, their investment of 10/- had now been increased to £2, and there were actual tangible assets undoubtedly worth the amount they were shown at in the balance-sheet, to represent the investment. The company was, therefore, strengthened financially without having to call upon its shareholders for any further money.

A portion of the surplus for the year had been carried to a special export fund, for which the sum of £750 had been set aside. The Directors proposed to offer some inducement to growers to make overseas shipments during the coming season. The exact lines on which this would be

done had not been decided, and if at the end of the year it was decided to withdraw the money from this export fund and use it for some other purpose, it could be done by resolution at the next annual meeting.

A further sum of £100 was added to the organisation reserve, bringing the total up to £300. Under the new system of levy of 2½ per cent., district organisations would receive a rebate of ½ per cent., but, of course, this rebate could only be expected by those districts who undertook effectively to carry out organisation work. The Directors would, in addition, use the organisation fund referred to by withdrawing amounts to pay for special visits of the Directors, Manager, or Market Representative to any district where such a visit was deemed to be an advantage to the organisation, or to subsidise local efforts in organising work. The question of a dividend on shares did not arise, as the only shareholders were district organisations. No individual except as a trustee could possess shares in the company. In any case, the articles of the V.C.C.A. prohibited dividends being paid.

Growers generally, and the district organisations had every reason to be satisfied with the financial result of the year's operations and the greatly improved financial standing of the V.C.C.A., due to the efficient and careful administration of the company's affairs.

From the inception of the V.C.C.A. Orange-growers had been saved by it 2½ per cent. in the selling commission, which was considerably more than the total expenses of the organisation. The organisation had thus succeeded in securing increased returns to growers while at the same time not costing growers one single penny. There were, in addition, innumerable other benefits accruing to members. It could be claimed that no other company of fruit organisation in Australia could show a better, if so good, result of its operations.

The motion for the adoption of the report and balance-sheet was seconded by Mr. D. J. Walters (Murrabit), and carried unanimously. Delegates congratulated the Directors on the results achieved and expressed great satisfaction with the company's sound financial position. Mr. A. W. Schwennessen was elected Chairman of Directors. The number of Directors was increased to four, and Mr. P. Cobbett, of Bamawm, was elected to the newly-created vacancy.

CITRUS GROWERS' SMOKE SOCIAL.

A PLEASANT feature was introduced at the recent Interstate Citrus Growers' Conference at Melbourne, in the holding of a smoke social.

By this means growers and accredited agents were enabled to know each other socially, while the speeches from eminent visitors were distinctly valuable.

Mr. A. W. Schwennesen presided, and carried out his duties with ability.

Mr. E. J. Mulvaney, a member of the Development and Migration Commission, suggested the organisation of the citrus industry on an all-Australian basis. He spoke of the natural increase of population (100,000 per annum, and the influx of migration.

Fertile lands would shortly be opened up for irrigation, and the problem was what to do with the products when grown. There was close co-operation between the Departments of Agriculture, the Development and Migration Commission, and the Council for Scientific and Industrial Research.

Mr. J. M. Ward said that by improvement of types, citrus fruit could be produced in Australia as an all-the-year product. The maturity standards were being reviewed.

Mr. C. G. Savage, Chief Horticultural Officer for N.S.W., spoke of tests with bicarbonate of soda for preserving. Bud selection and stock selection went hand in hand, valuable experiments were being made at the citrus nursery at Narara, and at Bathurst for pome fruits; a portion of the Sydney Botanic Gardens was used as a quarantine station through which valuable new varieties of plants were being imported. Sixteen new varieties of citrus had recently been imported.

Continuing, Mr. Savage said that the Blackwood Experiment Orchard in South Australia, was one of the finest institutions of its kind in Australia.

Dr. Young, of the Council for Scientific and Industrial Research, told of the work being done with bicarbonate of soda as a wash for citrus fruits. Fruit was successfully stored for four months. The use of gloves and clippers was recommended, also most careful handling at every stage.

The use of borax for preserving appeared to be going out.

Mr. Claringbold, Victorian Railway Department (perishable goods shed), welcomed co-operation between growers and the Department. Straw-

berries and Raspberries were sent in buckets; Figs should be put into kerosene tin containers before being cased.

Hearty appreciation was expressed for the work of the Chairman (Mr. Schwennesen), and the Secretary (Mr. B. S. B. Cook).

Citrus Growers and the Railways Department

Frank Statement by Mr. Clapp. Some Growers not Playing the Game

"You Have the Will to Succeed."

THE CITRUS INDUSTRY owes much to Mr. Harold W. Clapp, Chairman Victorian Railways Commissioners, for his active propaganda to increase the consumption of Oranges and Lemons, and very definitely, because of the large purchases of citrus fruits by the Railways Department.

At the 1928 Conference, Mr. Clapp

delivered under supervision, and that purchased on faith. The Australian citrus industry was haphazard compared with the Californian industry. Before attempting the export markets growers should learn how to handle the home market. Co-operation between the management of the Association and the growers would dispel suspicion born of ignorance.



Much loss with citrus is caused by careless handling. This picture shows how Californian pickers wear gloves and use clippers.

Photo Sent to the "Fruit World" by the Los Angeles Chamber of Commerce.

was cheered, and the delegates rose and sang "For He's a Jolly Good Fellow."

At the 1929 Conference, Mr. Clapp was equally welcome. But on this occasion it was a subdued audience that listened to a frank yet helpful address. Certainly delegates were uncomfortable on being told that some growers only delivered good fruit when "policed" by the Railway Department or the Agricultural Department.

But the justice of Mr. Clapp's remarks was admitted, and he finished on a high note of confidence in the will of the growers to succeed.

Mr. Clapp said that primary industries and the transport industry were mutually dependent.

The Department was increasing its purchases, but some growers were not "playing the game." There was a vast difference between the fruit

"Let us all pull together," continued Mr. Clapp. "We Australians have individually brains and common-sense. You have the will to succeed, and I am sure will win out."

In proposing a vote of thanks, Mr. H. G. Such (N.S.W.), spoke of the excellent work accomplished by Mr. Clapp through his visit to the N.S.W. Citrus Growers' Association. One result was that the N.S.W. Railway Department was now taking a much more active interest in the citrus industry, and other branches of the fruit industry.

Replying to the vote of thanks, Mr. Clapp said that he predicted that the New South Wales Railways Commissioners would far exceed what had been done in Victoria in popularising citrus fruits. He had been greatly attracted by the method adopted in New South Wales of selling Grapes in cartons, and he intended to adopt it in Victoria.

Strawberry and Loganberry Culture

Helpful Seasonable Hints: Notes on Pest Control. Some Insect Friends.

Trellising Loganberries: Advice on Manuring.

Continued from Page 174 in May "Fruit World"

Treatment of Beds after First Year.

If the plot is well cared for it will last for years. Where runners have been left on young beds with a view to sale or planting out, when the plot should be worked or manured will depend a good deal upon when the plants are required. When runners have been kept off with a view to an autumn crop, as soon as that crop is harvested and the winter is over, attention should be directed to the clearing off of all dead leaves and rubbish that would be likely to carry over disease or insect pests to the following season, and to the digging up and manuring of beds.

From the middle of June to the middle of July is a good time for this work.

A good dressing of manure

should be applied, and dug in with a fork or hoe, so that it may rot down ready for the spring growth. Either blood and bone (10 lb. to the rod), or its equivalent in farmyard manure, or, if sulphate of ammonia is obtainable, a mixture of this (1 lb.) and blood and bone (8 lb.) may be used. A little more of whichever fertiliser is used may be added during the growing season if there is promise of a big crop, but care should always be taken not to sow blood and bone or any nitrogenous manure too close to the plants in summer time, and whenever such manure is used a good supply of water should be used also. Where vacancies have occurred for any reason they should now be filled.

Burning off Grass Among Plants.

When a light crop of summer grass has grown up around the plants a fire may be run through them; this destroys fungus-infected leaves, and any insects which have been sheltering among them for the winter. It is also generally claimed that it produces a much better color in the berries for the next season.

Where the crop of grass is heavy it will be necessary to mow off and remove part of it before attempting to burn, or the excessive heat may damage the crowns of the plants. If there are patches without any grass, some of the excess from other places may be sprinkled over them and fired. Care should be taken not to fire where there has been a heavy coat of mulching until that has been removed. In any case it is wise to choose

for this work a day when there is a light breeze blowing, so that the flame will pass over the plot quickly.

On plots on which no runners are being saved for sale, when the rubbish has been cleared away the spade or some sharp implement should be run along on either side of the alley, just level with the edge of the original plants. When this is done all runners in the alley space can be dug in, and where runners that are not required have rooted along the single row, or in the matted row, these should now be thinned out. Where an old plant is looking sick, and there is a healthy runner near, leave the runners and pull out the old plant. Sometimes a lot of young seedling plants will come up along the rows. These should be weeded out, as they will not develop true to type, and may spoil the grower's stock. If a grower wishes to experiment with them, with the hope of getting a good new variety, he should plant them out separately.

Diseases and Pests of the Strawberry.

Chief of the fungous diseases of the Strawberry are black spot and mildew. For these an early spraying of Bordeaux mixture is the best remedy.

Red spider is another common source of trouble, many hundreds of these small mites attacking the leaves on the under surface and sucking the sap to such an extent that the upper surface of the leaves has a dirty, creamy appearance, and the plants suffer severely from loss of vitality. These mites are hard to deal with while the plants are growing, but they can be killed in thousands by burning the tops off with grass (in the way already described) at the end of the season. A nicotine spray is effective where it can be applied without interfering with the fruit, but plenty of water is perhaps the best remedy.

Another Strawberry pest is the small weevil which eats the crowns out of the plants occasionally, but I have not noticed much damage being done by weevils in the Ryde and Pennant Hills district. The white curl grubs which are commonly dug up in the ground, and which are the larvae of several species of beetle, are about the worst pest here, particularly where bush rakings from

under eucalyptus trees are used for mulching. Investigations have now shown that a large percentage of the beetles damaging the crops belongs to the genus *Melolonthidae*. These beetles feed on the leaves of the eucalypts, as well as on those of Apricot, Plum, and other fruit trees, and when feeding on the gum leaves they drop their eggs among the fallen leaves and other rubbish.

When the grower gathers the leaves for mulching, he gathers also the eggs of these beetles, and by this means often introduces them into his Strawberry plot. On the other hand, when the adult beetles have been feeding on Apricot and Peach foliage in the orchard close to the Strawberries, the soft mellow soil which results from the rotting leaves appeals to them as a most attractive laying ground. When the young larvae hatch they feed freely on the roots of the plants, and when plentiful will often eat out patches rods wide. The pest has always been with the Strawberry grower to a certain extent, but during recent years it has increased in virulence.

Sometimes a large bed will be so badly damaged by June that it is found necessary to dig up the remaining plants and transplant them in a new plot. When digging up the old plants as many as possible of the grub larvae should be destroyed, as if they are allowed to pupate and emerge as beetles the number of eggs laid for the next season will be considerably increased.

So far no effective remedy has been found for white curl grubs. As they feed on the roots only, and do not come to the surface, poisoned baits (as used in the case of cutworm larvae, which come to the surface to feed) are not practicable. Large growers rely principally on a semi-safety measure consisting of keeping a young bed planted ahead, so that if the old bed gets badly affected they can turn their attention to the new one, and let the first "take its chance."

When the season is over and the larvae have pupated and emerged as beetles, plots that have been infested by the grubs may be used again, but it is wise to crop such plots with something else for one year, as all the grubs may not pupate that year.

growers can retrieve part of the loss occasioned by the ravages of the curl grub, by removing the Strawberry plants from the affected beds and planting such areas with beans.

During 1927 the Department tried soil fumigation with calcium cyanide and paradichloro benzene for curl grubs. In both cases a good kill was obtained when the grubs were confined in boxes and covered with 3 inches of soil, but when tested in the open field the results were not too satisfactory, as the fumes did not appear to penetrate far enough into the solid soil. Further experiments are being carried out, however, in this connection.

As the nature of the Strawberry industry renders it almost impracticable directly to adopt spraying and other ordinary combative measures, the grower must turn his attention to some other means of protection, and largely work on the sound principle that prevention—and interception—is better than cure.

When a grower who has an orchard close by his Strawberry plot finds his Apricot and Plum trees swarming with golden or grey-colored anoplog beetles, he should realise that they are the forerunners of the Strawberry pest, and apply his treatment then. This can be done by either spraying the trees with arsenate of lead, or by spreading an old sheet under the trees in the early morning or late in the afternoon when the beetles are drowsy, and shaking the tree or brushing it with a bush. By this means hundreds of the beetles can be collected in the sheet and subsequently be destroyed.

Another preventive measure is the exercise of some care and discrimination when collecting leaves for mulching. If the grower sees that gum trees have been partly defoliated by beetles early in the spring, he may do well to pass that neighborhood entirely; otherwise he should rake very lightly in order to lessen the risk of picking up with the lower decayed matter either the eggs or the tiny larvae of the beetles.

Some Insect Friends.

Another means of protection of which the grower can avail himself at little cost, is the enlistment of the services of useful insects found preying on the pests. Two of these may be described.

The first is the large metallic blue scolid wasp (*Discolia soror*), which can be seen flying about the Strawberry bed almost anywhere in summer, and which, if watched, will be seen to burrow her way into the soft

porous ground to deposit her eggs on the larvae of the beetles. These young wasp larvae when hatched, attach themselves to the grubs, and feed upon them until fully matured. They then roll themselves up in an oval-shaped silken cocoon, and lie in the ground until the warmth of the coming spring causes them to pupate and emerge as wasps again.

It is quite a common occurrence to find a grower killing these wasps—sometimes because he has been stung by one when interfering with him, sometimes because, seeing the wasp enter the ground, he has suspected him of being another pest. This wasp can sting, but it is perfectly harmless if left alone, and is really one of the Strawberry-grower's best friends.

The second of our friends is a Therevid fly. The larvae of this fly are widespread. They are very voracious, and will attack almost any soft underground larvae; indeed, such is their habit, that one cannot keep two in one jar for half an hour without running the risk of one sucking the other to death. I have reared the flies in captivity for twelve months, feeding them almost exclusively on curl grubs. I have found them among the larvae of the dicky rice, and in collecting grubs from among Strawberries for food for them I found that there also they were operating pretty freely.

I would therefore strongly recommend every grower to make himself acquainted with the appearance of this fly, and whenever he comes across him when killing others to spare his life. These two friendly insect agents can operate all through the season without interfering with the crop in any way, and though they should not be expected to do more than their share of useful work, they may nevertheless assist the grower materially in keeping the balance of nature.

COOL STORES CONFERENCE.

The annual conference of the Fruitgrowers' Cool Stores' Association of Victoria will be held during the second week in August. In the absence of an invitation from a country centre, the conference will probably be held at Melbourne.

THE LOGANBERRY.

(By P. H. Thomas, Chief Horticulturist, Tasmanian Department of Agriculture.)

The Loganberry first came into prominence at Santa Cruz, California, and was introduced by Judge J. H. Logan, of that district, states Mr. P. H. Thomas, Tasmanian State Fruit Expert. The origin of the fruit has provoked a lot of discussion. Some attribute it to be a chance hybrid between a late Raspberry and a Blackberry, whilst others believe that it is a distinct species of the latter. The berry has now been planted in all temperate parts of the globe, and is cultivated and grown successfully in South Africa.

The long, reddish-black fruits, with their brisk sub-acid flavor, are rapidly becoming popular amongst jam and preserve manufacturers, owing to the distinctive and palatable flavor of the products that can be made from them. During late years experiments have been made in drying Loganberries, and at present a very good article has been evolved, which can be put to all the uses of other dried fruits. Perhaps the most popular product from the Loganberry is the cordial which is manufactured from the juice.

The Loganberry thrives best in deep, well-drained loams of a light texture, that may easily be maintained in a high state of cultivation. The heavier or clayish soils will grow good quality fruit if treated with a liberal application of lime, and if means are taken to conserve the soil moisture during the growing and ripening months. A situation should be chosen that is free from late frosts, as the young canes are very susceptible to injury in this way. It frequently happens that whole crops are destroyed where frosts are experienced to an excessive degree, so sure information should be gained in regard to the locality before planting.

The two chief methods employed in the propagation of the Loganberry are those of tip-layering and division by stools. In the former the canes are pegged down just before the buds commence to shoot and covered with earth, leaving the young growths just free of the soil. Roots will spring from the base of each shoot (where it departs from the parent cane), and each rooted portion can be detached in the winter, making a separate plant. This is the method by which the majority of plants are raised, and if carried out with strong, healthy canes will give general satisfaction.

-LEMONS-

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The soil should be well ploughed, disced and harrowed, bringing it to a good tilth before planting, which is generally carried out in the autumn.

The Loganberry needs a good deal of space for its development and feeding.

When planting out an area the rows should be marked off at a distance of at least eight feet apart. If possible, these should run north and south, so as to allow for an even amount of sunshine on each side. A good furrow should then be ploughed in the position of each of the rows, and the individual positions of the plants well manured with a dressing of about 2lb. to 3lb. of blood and bone manure. The plants should be set at the bottom of the furrow, about 10ft. to 12ft. apart, and lightly covered with soil.

Before trellising the area it is advisable to carry out a couple of harrowings at each angle. This will work the soil down to a proper level, ensuring deep rooting.

A trellis will be needed for training the canes in order to keep them off the ground. Strong posts about 7ft. in length should be set at intervals of about 40ft. in the rows, leaving 5ft. clear above the surface. The end posts should be strongly braced and two or three wires stretched taut along the line at a height of 3ft. 6in and 5ft. respectively.

The young canes should be thinned out each year, leaving only the strongest to carry the season's crop. At the end of each fruiting season the old canes are cut out and burnt, leaving only the stronger and new ones, which are tipped to the requisite length and tied to the wires, spacing each so as to cover the trellis.

The Loganberry is a gross feeder, and will soon exhaust a soil unless manuring is given proper attention. Well-rotted stable manure or green crops are recommended, as it is necessary to keep the soil in a good mechanical condition in order to conserve the moisture.

Of the commercial fertilisers, bone meal or blood and bone manure give good results, especially if applied in the early autumn after the crops have been harvested. During the winter months the surface water should be carried away by plough furrows run between the rows. These will carry away any surplus water and keep the soil in good condition, as any excess of water is likely to retard the early spring growth.

The berries should be gathered in a dry condition, as any moisture or dew will affect their keeping and carrying qualities. A small shallow tray, with a handle across the centre,

is generally used by pickers. The fruit is generally picked into punnets and crated, if for the retail trade or forwarded in buckets or casks for jam and preserves. Berries required

for dessert purposes should be picked when they are dark red in color; in this stage they are firm, and will withstand transport better than if fully matured.

Tasmania.

News and Notes.

State Fruit Advisory Board.

A MEETING OF THE STATE Fruit Advisory Board was held at Hobart on April 30. There were present:—Messrs. B. J. Pearsall, M.H.A. (Chairman), J. H. Astell, W. H. Calvert, M.L.C., O. J. Morrisby, A. Davies, V. J. Skinner, F. Peacock, T. J. Eddington, N. Campbell, M.H.A., J. P. Piggott, M.H.A., P. H. Thomas (Secretary).

Mr. T. Burbaby (fruitgrowers' representative on Hobart Wharf) was complimented upon his work on the wharves.

Overseas Shipping Conference.—The Chairman presented his report dealing with the Conference between the overseas shipping companies and representatives of exporters, and was accorded a vote of thanks.

Duty on Fertilisers.—Messrs. Neil Campbell, M.H.A., and A. Davies were appointed to give evidence before the Tariff Board re the duty on fertilisers. The Secretary was requested to prepare a report detailing the quantities of fertilisers used in fruitgrowing.

Mr. G. McGowan.—Mr. G. McGowan tendered his resignation, as he would be away six months on a visit to England. It was decided, as Mr. McGowan would be making enquiries into the fruit industry, it was unnecessary for him to resign.

Board of Trade.—Messrs. H. Jones & Co., on behalf of Tasmanian Apple evaporators, drew attention to inadequate representation of Tasmania on the Commonwealth Board of Trade, owing to the serious illness of Sir Alfred Ashbolt and the inability of Mr. C. James to attend at present. It was decided to request the Premier to recommend the Federal Government to appoint Mr. F. Peacock to represent Tasmania.

Brisbane Show.—It was decided to vote £30 towards a Tasmanian exhibit at the Brisbane Show, and that Mr. W. H. Calvert, M.L.C., co-operate with the Fruit Expert in preparing the exhibit.

Australian Conference.—In response to the suggestion from the Victorian Fruitgrowers' Cool Stores' Association that the Minister for Markets summon an Australian Conference of Apple and Pear growers, it was de-

cided that the present time was inopportune for the proposed Conference.

Melbourne Agents.—It was decided to add Mr. J. W. Ross to the Melbourne Committee of Agents.

Apple Export Regulations.—A Conference was held between members of the State Government, Federal members, and the Board in regard to the proposed amendments to the overseas export regulations.

The Premier and Minister for Agriculture were present, together with members of the Board, but Mr. C. E. Culley, M.H.R., was the only Federal member who was in attendance. Apologies were received from Senators Sampson and Millen, H. J. Payne, M.H.R., and G. Bell, M.H.R.

The Chairman outlined the proposed amendments, and members explained the inimical effects certain of these would have on the export industry. Resentment was also expressed at the way the amendments were arrived at, and the injustice that had been meted to Tasmania in not being adequately represented on the Conference which recommended their adoption.

After further discussion, the matter was left in the hands of the Minister for Agriculture to approach the Federal authorities with a request that opportunity be given for the Board to directly place their views regarding the matter before them.

Export News.

Messrs. H. Jones & Co. Pty. Ltd. report as follows:—

The quantity of fruit shipped from Hobart, Beauty Point, and Hospital Bay (River Huon) to overseas markets to April, '29, is 713,317 bushels of Apples and Pears. This compares with a total of 1,850,783 bushels exported to April 28, 1928. The quantity still to be shipped from Tasmania, if the space is completely filled in the five steamers still to load, is roundly 180,000 cases.

In addition, the following vessels are still under offer:—

May 18.—"Cathay."

June 1.—"Mooltan."

June 1.—"Esperance Bay."

June 15.—"Chitral."

But we think it is very doubtful whether any of these will actually call at Hobart, as growers do not seem to require late shipments this year.

With regard to the grading regulations, we are very much of the opinion that when any amendments are contemplated representatives of the growers should be consulted before such alterations are decided upon. This is a matter which the State Fruit Advisory Board in Tasmania has complained of repeatedly, and as that Board has the backing and authority of growers in Tasmania, it will be seen that it is qualified to deal with all matters of this kind.

New Zealand.

The Spread of Fireblight.

NOW that fireblight is in the centre of the South Island and is practically certain to spread from end to end of this island, as it has already done in the North, it is time both farmers and orchardists made preparations to be ready for its appearance in fruit-producing districts in Nelson, writes Mr. R. Pattie, in the "Motueka Star." Continuing, the writer points out that fruitgrowing districts would be better without Hawthorn hedges, which act as a host for fireblight and scale.

At the same time, the destruction of Hawthorn hedges is a big and serious problem, and farmers would suffer great loss should these hedges be destroyed.

EXPORTS FROM N.Z. TO SOUTH AMERICA.

It is good to find that South America is being thoroughly exploited this season, writes the Wellington correspondent of the "N.Z. Smallholder," and that the N.Z. Control Board's agent there has cabled, stating that the prospects are favorable for satisfactory realisations. The South American stocks of U.S.A. fruit are not so large as in former seasons, and the competition of Chilean fruitgrowers in the Argentine market has been greatly reduced through the Chilean Government putting into operation effective grading and packing regulations. Canada seems to be coming quite well into the picture, after a most unpromising start. Last season the Control Board tried out some consignments, but the price results were very disappointing, though the comments on the quality, packing and grading were highly complimentary.

Growers, however, do not maintain

good health and spirits on complaints, so they responded very feebly to the invitation to again consign to Canada. However, their risks have been removed, for the Control Board has arranged a straight-out sale of 10,000 cases of Extra Fancy Delicious, size 150 to the case, at a price of 15/- per case c.i.f. Halifax, which is equal to 11/4 per case f.o.b. at Wellington.

Proposed Australian Fruit Conference.

States Not Unanimous.

THE Cool Stores' Association of Victoria recently protested to the Commonwealth Department of Markets against the alteration of the Apple export grading regulations without consulting the growers, and also wrote to the Department of Markets requesting an Interstate Conference of fruitgrowers.

The Department, in reply, wrote, stating they could not call an Interstate Conference unless there were a general desire from the other States.

The Cool Stores' Association proposed a list of subjects for discussion, and submitted same to Interstate fruitgrowers' organisations. The subjects were as follows:—

Co-ordination between the States in arranging destination of cargoes of Apples with the view of minimising the possibility of overloading at any one port.

Wider distribution of fruit overseas.

The advisability of adopting the use of the standard (Canadian) case for export.

Pre-cooling of fruit for export.

The maximum quantity advisable to stow in one hold.

The allocation of separate holds for each State.

Review of grading regulations.

The advisability of a small levy on all fruit exported to provide finance for an Australian Apple and Pear Growers' Association.

Improvements in loading on to steamer and in refrigeration on board.

The foregoing list of subjects was submitted to fruitgrowers' associations in the other States asking them to write to the Department of Markets, requesting the desired conference.

A favorable reply was received from the N.S.W. fruitgrowers' Federation. The South Australian Fruit Marketing Organisation replied, stating that they were organising the growers, and hoped to co-operate

with similar organisations in the other States without depending on Government assistance.

The Tasmanian State Fruit Advisory Board wrote, stating the present time was inopportune for representations to be made to the Commonwealth authorities for a conference.

No reply was received from Western Australia.

It was decided to take no further action in regard to the calling of the proposed conference.

BRITISH ORANGE IMPORTATIONS.

British importations of Oranges in 1928 amounted to the equivalent to 12,440,000 boxes of 70 lb., as compared with 12,632,000 boxes in 1927, according to statistics issued by the Empire Marketing Board. The principal sources of supply are Spain, Palestine, South Africa, U.S.A., Italy and Brazil. The decline in imports during 1928 was the result of a reduction in imports from U.S.A., Palestine and Italy.

This decline was appreciable, though off-set by increases from Spain, South Africa and Brazil. The bulk of Oranges imported into the United Kingdom comes in from November to June, when supplies from Spain, Palestine, and Italy are available. Imports during the four months July to October are very much lighter than during the rest of the year. It is chiefly during this season of relatively low supplies that American Oranges are shipped to the British market. Trade from Brazil has increased from 30,000 boxes in 1927 to 141,000 in 1928. There are increasing supplies from Empire sources. In 1923 about 13 per cent. of Oranges imported in the United Kingdom came from Empire sources. By 1923 this had increased to 22 per cent., mainly from Palestine and South Africa.

Fruit Taint Spoils Eggs.

At the recent Commonwealth Poultry Conference held at Melbourne in April, it was resolved to ask the Department of Markets to introduce a rigid inspection of all vessels carrying eggs, with a view to prevention from contamination by fruit. It was stated that during the past season losses of £6,000 had been made through taint, and the placing of tainted eggs on the market had given Australian eggs a very bad name and lessened their value.

* * *

Doctors all over England are strongly recommending Oranges and Lemons both as preventives and as cures for influenza.

Seasonable Work in the Orchard.

Spraying - Manuring - Pruning - Some Helpful Hints.

(By Rodney Fowler, Manager, Government Experiment Orchard, Blackwood, South Australia.)

PRACTICAL ADVICE for fruit-growers is contained in an interesting letter to hand from Mr. Rodney Fowler, Manager, Government Experimental Orchard, Blackwood, in answer to some questions asked by the "Fruit World."

Mr. Fowler writes:—

For fungus diseases, we use an autumn spray of 1-1-10 Burgundy (we are busy on the Apricots and Peaches now—April 29), followed by a 1-1-10 Burgundy in the pink bud stage. We find this very effective in controlling Shot Hole of Apricot and Curl Leaf of Peach. Black Spot of the Apple does not trouble us very much in our comparatively dry climate, and we have found a "pink" bud spray with 1-1-10 Burgundy quite effective in controlling this disease. We are testing the benefit of autumn spraying in this regard, but have nothing definite to report yet.

In regard to the value of the autumn spray for Curl Leaf on the Peach, experiments have more than once proved that check trees of the Elberta variety sprayed only in the autumn have withstood the attacks of the disease and been perfectly clean, but I would not suggest on that account that the spring spray might be omitted.

For Insect Pests.—Perhaps we are fortunate in that we have not yet found it necessary to carry out any winter spraying for the Woolly Peach or Cherry Aphis or for Bryobia Mites, but after the ravages of the Green Aphis of the Peach last season, we propose carrying out a number of tests with winter sprays this coming season. Dr. Davidson, Entomologist at the Waite Agricultural Research Institute, is assisting us in this connection by research work into the life history of this insect under our conditions.

For the control of Black Peach Aphis, we have found Black Leaf 40 and soap as per directions on container very effective, but the results were not so good with the Green Aphis. For this species, Atomol tobacco dust, applied with a dust gun at the rate of about 1lb. per tree, gave very good results. Cherry Aphis has not been very troublesome, but efforts at control have, so far, not been very successful, either with dusts or wet sprays, owing to the difficulty of reaching the aphids, so effectively sheltered in the curled-up leaves.

For Apple and Pear Woolly Aphis, no autumn or winter sprays have been used. I might here mention that

the *Aphelinus mali* is doing splendid work in the control of Woolly Aphis of the Apple, and is now well established in many orchards in this State.

Green Manuring.

For the past three years, portions of the orchard have been sown with Peas at the rate of $1\frac{1}{2}$ to 2 bushels to the sown acre, with 45 per cent. super. at the rate of 2cwt. per acre. I have also tried tick or horse Beans, but they failed to make much growth, and there was very little material to plough under. Peas, on the other hand, did well.

The effect of liming

on the growth of Peas was very strikingly demonstrated in one plot. This block had been used for a liming experiment four years previously, being divided into two portions, one sown with one ton of burnt lime to the acre and the other not treated. The limed portion produced a crop of Peas five or six times as heavy as the unlimed portion, and very clearly demonstrated the advantage of liming in a heavy soil such as ours at Blackwood.

Pruning.

It is very difficult to lay down hard and fast rules for pruning fruit trees. The experienced pruner is guided by consideration of kind, variety, age and vigor of the trees and very often the pruning method has to be modified to suit local conditions.

Without going into detail and speaking generally, for young non-bearing trees, the object of the pruner should be to obtain a tree with a sound framework, good constitution, and capable of carrying good crops of fruit, and this object will be best attained, not by the system of very hard pruning practised in the past, but by adopting a more moderate method.

Non-bearing trees should be encouraged to make as much growth as possible, as it is only large trees that produce large crops. The desired shape of the tree should be maintained, but more branches might be left than are ultimately required. These can be removed later on and many of the finer laterals that were once rigidly cut out should be retained.

Not more than one-third the length of leaders and laterals that are allowed to remain, should be removed. Trees moderately pruned in this manner will attain greater size and eventually yield more fruit than those which have been more rigorously treated, other conditions such

as water supply, cultivation, spraying, fertilising, etc., being equal.

When the trees have reached a full bearing stage, the amount of growth made will not be so great and more in proportion can be removed. The object of the pruner then will be to stimulate root action by a judicious amount of pruning and to regulate the fruit crop by the thinning out of fruiting wood, not by removing the whole fruit spur, but by reducing the subdivisions, especially in the case of old trees which have a tendency to overbear.

With regard to various systems of pruning, two methods have been tried experimentally—(1) regular pruning in the general way every year, (2) pruning every other year, and of the two systems No. 1 is the most satisfactory.

Cross-pollination.

No definite information can be given in respect to inter-pollination, as this orchard possesses so many varieties that an experiment of the kind is hardly possible, but from previous experience and observations outside, it would seem that inter-pollination is a factor to be considered in the planting of an orchard.

Manuring.

With the exception of cover crops in certain portions of the orchard, no general manurial practice is followed apart from the experimental manure plots. In these plots superphosphate, sulphate of ammonia and sulphate of potash are used both singly and in various combinations, but so far the results are somewhat contradictory, and not in any way consistent. One fact, however, does stand out—that in the tests receiving nitrogen, the trees appear more healthy and vigorous, the leaves are of a deeper green color, and they remain on the trees longer than on trees not receiving nitrogen. Manured trees on the average, in the tests, produce better fruit, if not a greater weight of fruit, than unmanured trees.

S. AUSTRALIAN ORCHARDS.

In South Australia there are 30,983 acres of orchard—over 1 acre in extent—and 50,663 acres of Grape vines, making a total of 81,646 acres given over to growing these fruits.

UP-TO-DATE.

Fruitgrower: Hey, there! 'Ow come you to be up my Apple tree?

Boy: Please, mister, I just fell off an aeroplane.

Melbourne Citrus Market for 1928-29.

Report by G. E. Kitchin-Kerr, V.C.C.A. Market Representative.

THE 1928 citrus marketing season has been described as the worst the trade has experienced for twenty years. The adverse conditions of 1928 were all the more marked in that they followed an ideal marketing season, so far as conditions of supply, size and quality of fruit, and public demand were concerned. Whereas in 1927 80 per cent. of the navel Oranges were of readily marketable size, counts 96 to 126, the proportion of sizes 96 and up in 1928 ranged from 50 per cent. in the early part of the season to only 20 per cent. in September-October. These big Oranges had to be sold at 3 or 4 a shilling at a time when Apples, owing to an over-supply, were selling at 5lb. a shilling. Disturbed industrial conditions affected the purchasing power of the public.

Production Greater Than in 1927.

It had been expected that as a consequence of the heavy frosts during the growing season in most of the Victorian and Murray River border districts, that the citrus crop would be reduced very substantially, but partly owing to new plantings coming into bearing and partly owing to the crop left on the trees increasing above normal size, the yield in bushels over the whole of the areas was substantially greater than in 1927. Despite decreases in despatches from South Australia and from the Curlew-Mildura districts amounting to 115,000 cases, or a 33 per cent. reduction, the increased production from the remainder of the Victorian and border areas and from the Murrumbidgee irrigation area was responsible for an increase of approximately 65,000 cases sent to the Melbourne wholesale market. Fifty per cent. of the New South Wales supplies are estimated to have been made up of common Oranges and Mandarins from unorganised areas.

Operations of Speculators.

A big quantity of navels came to the Melbourne market through the operations of speculators, who were able to take advantage of the difference in prices between the depressed Sydney market and the higher prices being maintained on the Melbourne market. The position on the Sydney market can be judged from the fact that last year N.S.W. had the biggest crop on record, the estimate being 3,500,000 bushels, or 1,200,000 bushels more than the previous highest re-

corded total. According to the report of Mr. H. G. Such, manager of the Central Citrus Association, N.S.W., the 1928 Melbourne market prices were higher than Sydney.

The experience of the early part of the 1928 selling season in Victoria shows that with a greatly increased production of citrus it is not possible to maintain a high price, compared with that ruling on other markets, by a general withholding of supplies on the part of organised growers. Production now balances consumption to such an extent that although normal despatches may with advantage be augmented or decreased in maintaining a price level on the market, a cessation of supplies not only allows the speculator to exploit the situation, but also makes difficult the favorable sale of the fruit so withheld from the market.

Quality Generally Lower.

The general quality of the 1928 fruit was much lower than that of 1927, particularly in navels. The sale of Mandarins was adversely affected by the small size of the bulk of the crop, and by the fact that a proportion of the crop that would ordinarily have been marketed earlier in the season had deteriorated by the time it came on the market. Toward the end of the season there was considerable depreciation in the value of consignments owing to the development of waste.

Lemons were extremely difficult of sale during the greater part of the year. The Lemon crop had been greatly under-estimated, and a number of growers, contrary to the advice of the V.C.C.A. Directors, held off factory contracts in the expectation that the case market would offer a better return. As the season advanced it was realised that a greater quantity of Lemons than had been expected was available, and the market became oversupplied and extensive waste developed in that part of the main crop that had been held too long on the trees. Toward the end of the main crop Lemon season there was difficulty in selling Lemons at 5/- a case owing to the wasty nature of arrivals.

Marketing Season Prolonged.

The sale of Valencia was adversely affected by the extension of the navel season and also by the quantity of immature Valencia that came on the market at the beginning of the

Valencia season. Owing to the low prices ruling in November, growers held off the market until the beginning of the new year, with the result that there was a bigger quantity available at that period than was the case in previous seasons. The generally lower quality of the 1928 Valencias, together with the extra quantity available in the new year, meant a big reduction in values compared with 1927-28.

Second Quality Grape Fruit.

Grape Fruit, which had realised high prices in 1927, was not in demand in 1928, and the market was oversupplied at the beginning of the season with fruit from young trees. The limited demand for Grape Fruit was confined to the best packs, and the remainder, owing to its unattractive appearance and thick skin, could not be sold at half or even one-third of prices readily obtained for the product of older trees. Considerable waste developed in cool store, and finally the Grape Fruit remaining on hand had to be cleared for marmalade-making at 7/- a case. Comparative prices for 1927 and 1928 are as follows, according to the market reports:—

1927 and 1928 Prices.—1927—September 14: Navels, average standard, 10/- to 15/-; commons, 11/- to 15/-; Mandarins, best large, 16/- to 20/-; small to medium, 9/- to 14/-; Lemons, first quality, 9/- to 12/-; Valencias (December 19), 15/- to 19/-.

1928.—September 14: Navels (60's up), 7/- to 12/-; commons, 7/- to 10/-; Lemons, 6/- to 9/-; Mandarins, large, 10/- to 12/-; small, to 4/-; Grape Fruit, special, 18/- to 24/-; others, 8/- to 12/-; Valencias, 10/- to 15/-.

The net average is lower by 2/- than the comparisons between the two quotations would indicate owing to the size of the navels and Valencias and the poorer keeping quality at the end of the season.

V.C.C.A. Prices Maintained.

Prices for 1928 would have been much lower had it not been for the operations of the V.C.C.A. on the market and its system of regulating supplies and selling through its accredited agents at minimum prices fixed in accordance with supply and demand, and with the ability of the retail trade to pay. The readiness of the speculative element to exploit the market at the expense of the grower was manifest during the season, and it was apparent that had the growers' own organisation not been watching the position, lower prices would have resulted. Without the V.C.C.A. fix-

ing the minimum price for the different varieties and qualities of citrus the merchants and agents, in order to effect sales, would be underselling each other until they came down to a bedrock price.

Alternative is Control by Merchants.

The alternative to the V.C.C.A. would be a system of price-fixing by the merchants and agents themselves, and it is obvious that the prices so fixed would be more in the interests of the wholesalers than in those of the growers, particularly as the bulk of the citrus trade outside the V.C.C.A. is in the hands of merchants who theoretically buy in the fruit consigned to them at "market price," and who legally could sell the fruit on their own account at any sum above that price. As agents and merchants depend for increased business on the maintenance of competitive prices, the V.C.C.A. minimum price defines the market value and furnishes the price basis on which the wholesale trade works. Further fixing the price on the Melbourne market has the effect of fixing in a general way the price in the country.

Estimate of Melbourne Wholesale Market Arrivals, April, 1928, to February, 1929.

(Excluding factory, export, private sales and railways refreshment service arrivals.)

	1928-29.	Total.	Assocn. Percentage.
S.A.—			
Association	71,000		
Non-Association	13,000		
		84,000	84
Sydney—			
Association	3,000		
Non-Association	104,000		
		107,000	3
M.I.A.—			
Association	51,000		
Non-Association	82,000		
		133,000	38
Q'land—			
Association	8,000		
Non-Association	10,000		
		18,000	44
Victoria & Border N.S.W.—			
Association	237,000		
Non-Association	120,000		
		357,000	66*
		699,000	53

*Or 69.4 per cent., including Railway Department purchases.

After making allowance for citrus fruits sent to Melbourne on account of direct sales, export, factory orders and railway purchases, it is estimated that the wholesale case market absorbed from April 28 to February 28 nearly 700,000 cases, of which South Australia forwarded 84,000, New

South Wales 240,000 (compared with 174,000 in 1927), Queensland 18,000, and Victoria and border districts 357,000.

Of the S.A. arrivals, the V.C.C.A. (on behalf of the affiliated Associations) handled 71,000 cases, or 84 per cent., of the Queensland 8,000 or 44 per cent., and of the Victoria and border 237,000 or 66 per cent.

With the addition of 35,000 cases purchased by the railways through the V.C.C.A., the Association's percentage of Victorian fruit would be more than 69 per cent.

The proportion marketed under organised control was reduced by the N.S.W. despatches, which included a considerable quantity that had been purchased at low prices off the Sydney market or from growers in N.S.W. areas where there was no citrus growers' organisation.

Of the N.S.W. despatches only 23 per cent., or 54,000, came under the control of the V.C.C.A., and the V.C.C.A. proportion for the whole of the Melbourne market was, on that account, reduced to 53 per cent., or 370,000 cases out of a total of 699,000.

for the Melbourne market represent an increase of 91,000 cases, or 70 per cent. on the total handled on behalf of V.C.C.A. members in 1927.

Limitation of Agents.

The system of limitation of agents has been criticised on the assumption that it involves an accumulation of stocks in the stores of a few agents and reduced prices in order to keep stocks clear. The most critical review of the actual operations of accredited agents does not disclose any basis for such an assumption. The V.C.C.A. total is not evenly divided between the seven agents, and the records of the agents handling the bigger proportions show that their sales are as prompt and their prices as high as that of agents handling the smallest proportions.

The quantity of citrus fruit one agent can handle is dependent on the agent's sales organisation, and the seven agents selected by the V.C.C.A. could handle between them at least 75 per cent. of the citrus fruit coming on the market without unduly accumulating stocks or causing a reduction of values. Whatever may be the case in respect of the more perishable fruits that must be sold quickly, there is no doubt that there are too many persons interested in the handling of Oranges and that an undue extension of the number would necessitate an increase in selling charges and would render price control extremely difficult.

The system of limitation of agents is admittedly not a perfect one, but before any improvement can be effected the citrus Associations must receive a fuller measure of support from growers and the average standard of the citrus pack must be greatly improved.

Difficulties of Effective Organisation.

Organisation in the Victorian citrus industry would be less difficult and a substantial increase in the consumption of Oranges would be facilitated if there were fewer producing districts and also fewer individual packs coming to the market. With a production of much less than one-sixth of the N.S.W. and only a little greater than that of South Australia, the Victorian-border area has 22 separate groups, which represent 18 different districts from the point of view of soil and climatic conditions. To a great many in the industry the production of citrus fruits is only a side-line. Approximately 10,000 acres of citrus, bearing and non-bearing, are spread over 1,800 individual holdings (less than six acres average per holding, ranging from $\frac{1}{4}$ to 100 acres), from Mildura and Curlwaa to Cob-

ram and Barooga and from Moama and Echuca to Kyabram and Doncaster.

Fifty Despatching Stations.

Oranges and Lemons are despatched from more than 50 Victorian railway stations, excluding those whose despatches are below 500 cases. Of the despatching stations, only five (Cobram, Merbein, Shepparton, Irymple and Lockington) send more than 40,000 cases, five (Echuca, Murrabit, Tresco, Mildura and Kerang) send from 20,000 to 40,000, seven from 10,000 to 20,000 cases, and 33 stations send a combined total of 130,000, or fewer than the combined totals of Cobram and Shepparton. Less than one quarter of the gross production is packed by 12 central or district sheds with proper equipment, and more than half is packed by individual growers, the majority of whom would appear to have only makeshift packing plants.

Lack of Standardisation.

With so many small individual growers and small sheds packing Oranges, it is obvious that there is a lack of uniformity in the packing standard, which must have an adverse effect on general market values. In the past, with a comparative shortage and a choice between the wholesale market and the private order trade, the average grower has not had the necessity for maintaining a high standard of packing brought home to him. In the future, with fully supplied markets, preference will be extended by buyers to packs that can be depended upon, in some cases to the exclusion of poor packs of lower grade fruit. Packs not properly sized and graded sell at 2/- to 3/- below well-graded packs, and the average small packer is losing more than his costs of packing and case through faulty packing, in addition to making the sale of his fruit more difficult. Growers generally should take more advantage of the facilities placed at their disposal for the improvement of the pack by the Department of Agriculture in sending throughout the districts the departmental packing expert, whose services are readily available.

Brighter Prospects for 1929.

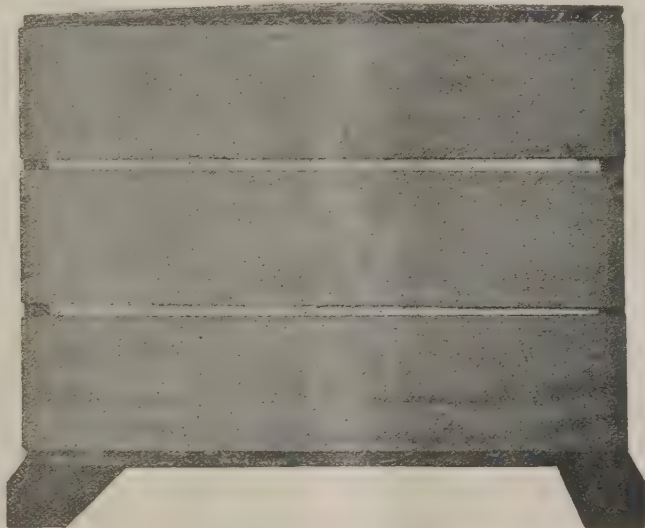
Prospects for the 1929 citrus selling season are favorable, and the indications are that prices will be decidedly higher than in 1928. Big-sized navel Oranges, which were a depressing factor on the market last season, are likely to be in smaller proportion this season.

Reports from N.S.W. are to the effect that there will be a much reduced quantity of fruit from the Murrumbidgee area, and the Orange

market generally is not likely to be oversupplied.

A lighter crop of Mandarins, with a higher average size, should mean better values, as last year the sizes available were outside the sizes, between 15 and 19 dozen, demanded by the market. The prospects of Lemons will depend on the quantity sold to factories, as the case market can absorb only a limited quantity, a big proportion of which is supplied by metropolitan growers. The higher price of Apples this season, compared with those ruling last year indicates a better sales basis for Oranges. Much will depend on weather conditions during the early part of the sell-

of the N.S.W. Fruitgrowers' Federation, was authorised to do the necessary organising work among growers. Addresses covering the marketing and general work of the V.C.C.A. were given in all the centres visited. Appreciation is expressed of the hospitality extended by Mr. and Mrs. J. Logan, Mr. and Mrs. A. Ingram, Mr. and Mrs. N. K. Murray, Captain and Mrs. Halhed, and Mr. and Mrs. P. Cobbett, and of the assistance given during the tour by Messrs. W. M. Newton, E. Wormwell, H. R. Paton and Captain Halhed, Messrs. G. Hughes, F. Loram, the various packing shed managers and staffs, and the departmental area supervisors



NAILING DOWN CASES.

Note.—Ends of cases are resting on battens, thus relieving the pressure which would otherwise come on the fruit if nailed on the bare floor.

ing season and prolongation or extension of the timber workers' strike will undoubtedly have an adverse effect on early citrus sales and on the marketing of the crop generally.

Organisation.

The following districts were visited during the slack period:—Nanneella, Tresco, Murrabit, Mildura, Irymple, Merbein, Red Cliffs, Leeton, Nyah, Bamawm, Cobram, Kyabram and Elmore. A period of 16 days was occupied in organising work in the Mildura-Red Cliffs area and in visiting Leeton. Captain Halhed, a Director of the V.C.C.A., also made the journey to Leeton, where a small but representative gathering of growers confirmed the decision of a meeting (addressed two months previously by Mr. Cook) to affiliate with the V.C.C.A., and Mr. Glover, Secretary of the citrus section, Leeton branch,

(Messrs. Lawrey and Muir) in the centres visited.

(Signed) G. E. K. KERR,
V.C.C.A. Market Representative.
May 7, 1929.

Orange production is increasing in Cyprus, and it is thought that before long this will be one of the potential producers of the Oranges in the Mediterranean area.

China imports over 500,000 boxes of Oranges annually. These imports will enter via Japanese and Russian ports and sell from 2d. to 3d. per pound. California citrus, however, usually commands a good price in the principal markets, such as Shanghai, Tientsin and Manchuria.

The latest estimates on Florida's 1928-29 output place the commercial production at 20,000,000 packed boxes, with 8,000,000 boxes for Grape Fruit and 12,000,000 for Oranges.

Cool Storage In Australasia

THE QUARTERLY MEETING of the Fruitgrowers' Cool Stores' Association of Victoria was held at Melbourne on May 14, Cr. W. Mock presiding. Delegates from affiliated stores were present. Mr. A. E. Webb (representing Bender & Co., Launceston), also attended, and was welcomed by the Chairman.

Australian Fruit Conference.—As insufficient support was forthcoming from the other States, it was decided to go no further with the proposal for the Department of Markets to convene an Australian Conference of fruitgrowers.

Apple Advertising Campaign.—The Secretary (Mr. J. G. Aird) submitted the financial statement of the recent Apple advertising campaign. The receipts were £549, the principal items being:—From the Cool Stores' Association, £396/10/-; Victorian Government, £50; Victorian Railways Department, £69/9/-. The expenditure amounted to £391, the principal items being:—Advertising (newspaper, posters, etc.), £318; competitions, £35; leaving bank balance £158.

The report included votes of thanks to the Agricultural and Railways Departments and the recommendation that the balance be retained by the Association in trust for future propaganda.

Petrol Tax.—It was decided to support the petrol tax instead of the present system of taxing motor vehicles on their horse-power.

Duty on Fertilisers.—The Secretary reported having received a letter from the Tariff Board requesting evidence from the growers regarding the incidence of duty on fertilisers, but the letter came too late for attention.

Mr. Fankhauser urged a reduction of duty on orchardists' requests generally: costs of implements had gone up by 100 per cent., but the price of fruit remained stationary. The giving of bounties was a delusion, as the growers were taxed more than double the value of the bounty. Growers must not take these impositions "lying down."

It was decided to request Mr. Cyril James, of Bendigo, to address the forthcoming annual Conference on the subject of tariff incidence.

Royal Agricultural Society.—Messrs. J. H. Lang, J. Jordan, A. E.

Thiele, and F. W. Vear were nominated as judges in the fruit section.

Deferred Payments.—The Secretary reported that the Victorian Government had agreed to deferred payments from several stores and that each store concerned would be notified.

Next Conference.—As insufficient support was forthcoming for the proposal to visit Batlow (N.S.W.), it was decided to leave the matter re a place for Conference in the hands of the President and Secretary. It was thought the Conference would be held at Melbourne in the second week in August.

It was decided to ask Prof. Wadham to give an address at the Conference.

Dry Rot.—Mr. Fred Thomas (Bunyip) requested information re treatment of dry rot where floors became wet. The Secretary stated that the Ringwood store recommended light, ventilation, and air.

Mr. Fankhauser suggested spraying the timber with copper sulphate (bluestone). No lime was necessary. If ropes were dipped overnight in bluestone solution that would last twice as long.

Direct Expansion or Air Circulation.—In reply to a question from the "Fruit World," the Secretary's action in supplying information was endorsed (reply published under "Answers to Correspondents").

Fire at Red Hill Cool Store.—Sympathy was expressed for shareholders in the Red Hill Cool Store because of their building having been completely destroyed by fire. The Secretary (Mr. Butler) reported that this was a serious and tragic occurrence. Everything was in readiness for the insurance of the fruit. The matter had not been finalised when the fire occurred. Because of crop shortage, growers had purchased their fruit and were holding it in store for favorable markets. The loss was heavy. The growers were bearing their loss with fortitude, which made the sympathy more sincere. No explanation could be given of the origin of the fire.

A discussion then ensued on insurance. Mr. Lipscombe suggested the Director's making a charge for insurance among the current running expenses. Mr. Aird pointed out how the building and contents at Ringwood

were automatically insured on a sliding scale, according to the quantities in store. Further, they insured their standing charges such as wages of engineer, etc. A cover for £1,700 was available for £14 a year. Mr. Lang (Harcourt) recommended insuring fruit and merchandise, including cases, spraying material, etc., etc.

Fruit and Flower Show.—Mr. Lang stated the Executive Committee had that morning decided to approach the Garden Week Committee regarding the holding of a combined fruit and flower show in April, 1930.

At the request of the Chairman, Mr. R. E. Boardman gave a resume of the draft proposals, which were of a very comprehensive nature. An international fruit and flower show was projected, linking up the horticultural activities of the State, from which could be created, if desired, a Chamber of Horticulture. It was decided to approve with the proposed show and take any steps necessary to initiate the same.

Sugar Position.—Mr. Lang stated that fruitgrowers suffered as a result of the sugar agreement. Growers should make their voices heard on this subject. The Prime Minister had not disclosed the terms of the agreement with the Queensland Government until the year after the agreement was signed. There had recently been a price war between the private and co-operative fruit preserving companies. The only prices not fixed were those for fruit, and with those the companies could juggle at the expense of the grower. Plums were being produced at a loss, and are going out of cultivation. The Harcourt Association had decided to ventilate the matter by getting their Federal and State members to attend a meeting which would also be addressed by Mr. R. E. Boardman.

Continuing, Mr. Lang reported having written to the Minister for Customs, requesting that jam companies be not granted a concession in the price of sugar unless the price of fruit were fixed. The Minister for Customs had replied, raising objections to this proposal, stating the sanction of the Queensland Government would be necessary. Further, that the Department would apparently be expected to do the work of collecting the data. Again, Mr. Lang's suggestion would involve varying qualities of fruit and would introduce the undesirable subject of price-fixing.

Mr. Lang stated it was late in the day for the Government to object to the proposal of price-fixing, seeing that they had adopted it so definitely in regard to sugar.

The report was adopted. It was decided to request that the sugar agreement be considered in Parliament before being extended.

VICTORIAN FRUIT MARKETING ASSOCIATION.

Proposals for firmly establishing the Victorian Fruit Marketing Organisation are now being considered. The Executive officers state that whereas no meeting had been called during the period of short crops, nevertheless the matter was receiving close attention, and details were being thought out.

The objective of the Association was to secure co-operation of growers, shippers, and all interested.

It is desired to have an organisation that will speak effectively for the industry in relation to grading regulations, elimination of unsuitable varieties, and to work in conjunction with similar organisations in the other States, in order to bring about improvements in the export trade generally, from the Australian standpoint.

The necessity of an effective organisation to benefit export trade has long been felt, and the V.F.M.A. has been launched with the idea of filling the need.

The Executive officers state, however, that if any better proposal can be made they will be most happy to work in with the same.

It is proposed to call a meeting shortly to establish the organisation. Further details are obtainable from the acting Hon. Secretary, Mr. A. S. M. Harrison, c/o International Fruit & Mercantile Co., 414 Flinders-lane, Melbourne.

A fruitgrower in Eastern U.S.A. spent £2/5/- per acre on nitrogenous manuring, and secured an additional £19/15/- per acre in return—a profit of £17/10/- per acre.

Interesting notes on manuring, spraying and pruning are given by Mr. Rodney Fowler, Blackwood (S.A.) Experiment Orchard, in this issue.

The s.s. "Dimboola" arrived at Melbourne in the middle of May from Western Australia, with 5,000 cases of Apples and 16,000 cases for Sydney.

There will be competition between the Apples of Western Australia and Tasmania for the markets of Melbourne, Sydney and Brisbane.

At a recent meeting the Fruitgrowers' Cool Stores' Association of Victoria sent a letter to the Department for Markets, protesting against the new Apple grading regulations without consulting the growers.

Editorial Chats



MR. COCK FOR CALIFORNIA?

THE request of the Citrus Conference last month, that Mr. S. A. Cock, Victorian Government Citriculturist, be sent to California for enlarged experience, will receive ready endorsement from the industry and the public.

It has to be admitted that in very many particulars, California is ahead of us. A very kindly feeling exists in California for Australia, in fact, for all who go for information. It is to the credit of Americans, that they readily give information. In fact, they seem to take it as a compliment when people come from other countries seeking advice.

Mr. Cock is a diligent observer in the citrus industry. He has many years of good service ahead of him. He would be a worthy representative of this country, while abroad, and would come back with much knowledge and enthusiasm to assist our industry.

Probably it would be worth while also to send with Mr. Cock one of the younger scientists of the Agricultural Department. The combination would be very helpful in every way, and would make for continuity of effective service.

With regard to other branches of the fruit industry, notably the Apple and Pear sections, it would appear to be very desirable for young Australians to visit the U.S.A. Pacific Coast, and gather helpful data for adaptation to Australian conditions.

* * *

South Africa sends twenty men to U.S.A. for every one sent from Australia.

IRRIGATION FRUITGROWERS' PROBLEMS.

Brown Rot and Transit Rot.

Codlin Moth Now Bad in Peaches.

Scientific Research Urged.

At the recent Conference of the Northern Victorian Fruitgrowers' Association, many urgent matters of importance were dealt with. At the instance of the Ardmuna Fruitgrowers' Association, it was unanimously de-

cided to request the Director of Agriculture to appoint Mr. S. Fish to carry out experiments for the control of brown rot and transit rot, which undoubtedly are the most serious troubles the soft fruit grower of the Goulburn Valley has to contend with at the present time.

Mr. S. P. Cornish, Secretary of the Ardmuna Fruitgrowers' Association, writes under date April 24:—

"We have every confidence in Mr. Fish and his methods. The experiments carried out for the control of scab and shot-hole of the Apricot and the results obtained were, in our opinion, most convincing.

"Another urgent matter was that of codlin in the late cling Peaches. Year by year this pest is becoming a more serious menace, and application has been made by the Northern Association to the Director of Agriculture to have appointed their most competent entomologist to experiment with a view to finding a satisfactory solution for control. Spraying Peach trees with arsenate of lead is fatal."

ANSWERS TO CORRESPONDENTS.

Fruit Cool Storage.—"Fruitgrower," Burwood, Vic., writes:—"Have any of your numerous readers had any experience in cool storing fruit under the direct-expansion system?"

"The majority of cool stores are under the cold air system, but there are a few direct expansion stores. I would like to have the opinion of some of the growers who have stored fruit under both the systems, as to the condition of the fruit stored in the direct expansion rooms."

Answer (by J. G. Aird, Secretary Fruitgrowers' Cool Stores' Association of Victoria).—"The question of direct expansion v. air circulation is still in the controversial stage amongst our most eminent refrigeration engineers, each system having its advocates.

From my personal experience, I should say it depends on local requirements and conditions. A small store up to about 10,000 cases, where the owner personally superintends the stacking of cases in the cool cham-

bers, the direct expansion system would be preferable. In larger stores worked on the co-operative principle with a large number of shareholders, each stacking his own fruit in the chambers, I should certainly advocate the air circulation system.

MATURITY TESTS.

Tolerance by Department of Agriculture.

The Victorian Central Citrus Association furnishes the following report:—

After a prolonged investigation and practical tests of various qualities of new seasons' Oranges, the Department of Agriculture of Victoria has decided to slightly relax the maturity regulations.

This modification is that while the legal standard of 23 cubic centimetres required to neutralise the acid in the fruit will remain as originally drafted, the Department is prepared to allow, as an experiment for this season, of two cubic centimetres tolerance. This will mean that Oranges which require up to 25 cubic centimetres of soda solution to neutralise the acid will be permitted to be sold. Fruit, which on being tested, shows a higher acidity, will be withheld from sale by the authorities.

District secretaries and packing houses are requested to give the widest publicity to this modification of the regulation.

The Federal Citrus Council has investigated complaints regarding the enforcement of the regulations, and is satisfied that the Departmental attitude has been absolutely impartial.

PERSONAL.

Mr. J. A. Parkes, Secretary of the Murray Citrus Growers' Association, South Australia, was one of the outstanding figures at the recent Interstate Citrus Conference. Mr. Parkes has an intimate knowledge of the citrus industry, and is a pleasant and convincing speaker.

Mr. H. G. Such, Secretary of the Central Citrus Association of N.S.W., impressed the delegates at the Australian Citrus Conference last month by his ability and earnestness. Though quiet and unassuming, Mr. Such has a fund of knowledge, and has the capacity of placing information in a concise manner.

Dr. U. P. Hedrick, horticulturist and vice-director of the New York State Agricultural Experiment

Station, has been appointed director of the experiment station at Geneva, N.Y., U.S.A.

Dr. Hedrick is widely appreciated, being known to the whole world of horticulture by his valued books on the various fruits of the New York State. These works are highly esteemed in Australia and New Zealand.

Mr. B. C. Criswick is the Acting Representative of the London and North-Eastern Railway in the absence of Major H. S. Cole, who sailed for England in April.

Mr. Criswick will be glad to answer any enquiries relative to the Port of Hull and other ports directed by the L.N.E.R. Co. His address is 7 Bridge-street, Sydney, G.P.O. Box 543B.

Mr. C. Beaumont, a senior officer in the horticultural division of the S. Australian Department of Agriculture, visited Victoria during May.

OBITUARY.

Sincere sympathy is felt for Mr. Fred Thomas, M.A., of Bunyip, Vic., in the loss of his wife. Mrs. Thomas had been ill for some time, and died on May 21. The many friends of Mr. Thomas feel very deep sympathy with him in his bereavement. Mr. Thomas is widely esteemed for his lovable disposition and for his earnest efforts to improve the fruit industry.

WAX AIDS GROWTH.

Of Transplanted Trees and Shrubs.

THE problem of getting newly-planted trees to grow, is one that continually faces the horticulturist, and the article contributed to "Nurseryman and Seedsman," by J. A. Neilson, Department of Agriculture, Port Hope, Canada, should prove interesting.

Nurserymen, states Mr. Neilson, experience difficulty in storing and transporting trees or shrubs in good condition over long distances, owing to the dying out of roots and trunks, which takes place between the time of digging and re-planting.

Believing that some form of protection for the trunks and branches would be helpful in shipping trees to distant points and in getting newly transplanted trees to grow, the writer conducted an experiment to determine the value of paraffin wax as one form of protection. The use of paraffin wax was suggested by the good results secured in sending scions to distant points and in storing rare varieties

of Nut tree scions for long periods of time.

Experiments, which illustrate these points are described hereunder. On October 16, 1925, a fine young grafted Heartnut tree was blown down by a heavy wind, and in the ordinary course of events would have been lost had not an attempt been made to save the tree by novel methods. The trunk and branches were cut into sections of about one foot in length and these sections were entirely coated with hot paraffin wax. The waxed sections were then packed in moist sawdust and stored in a cool place. During the winter the package containing the scions was inadvertently taken out and left in the open, where it was fully exposed to the action of wind and frost for nearly three weeks. The package, when found, was returned to the store house and left there until spring. On May 14, 1926, the scions were unpacked and grafted or budded on to suitable stocks of seedling Japan Walnuts. Quite unexpectedly a fair percentage of scions and buds started and grew well, and thus this rare variety was saved from destruction.

Equally good results were obtained in shipping waxed Walnut scions from Canada to England and in transporting scionwood of fruit and Nut trees from Poland to Canada. These latter, by the way, were cut early in the year and were carefully waxed according to the writer's directions before shipment. The scions arrived in Canada early in March and were held in storage until May 21, when they were grafted on to native sweet Chestnut stocks. Some of the Chestnut scions were sent on to Gellatly Bros., in British Columbia, and were there grafted on to native sweet stocks. Observations made just recently in Ontario and British Columbia show a high percentage of scions growing, thus affording another proof of the value of paraffin wax for preserving plant material.

Fruit trees and Rose bushes that have been submitted to the wax treatment have been transported long distances, and responded immediately after re-planting.

South Australian "Golden Drop" and "Shipper" Plums arrived in a fairly satisfactory condition in London. The trade is worth developing. Large Plums are desirable.

There was a big demand for selected buds from nurserymen from the Bud Selection Society connected with the N.S.W. Fruitgrowers' Federation. The demand was greater than the supply.

IMPROVING TOMATO VARIETIES.

Breeding and Selection.

THE TOMATO-GROWING INDUSTRY is worth £50,000 annually to New South Wales, and officers of the Department of Agriculture are experimenting at the Hawkesbury Agricultural College, and at the Bathurst, Grafton, and Yanco experiment farms with the object of improving commercial varieties, such as Earliana and Bonny Best, by testing and selecting promising strains. It is also proposed to raise the type and quality of fruit of the Chinese Large Red or Large Bendigo Red, now largely grown as an early crop in the field and in glasshouses, by cross-breeding with varieties of superior qualities and type. Breeding and selection for disease resistance will also play an important part in the works, says the "Farmer and Settler."

A number of selections (self-fertilised) were made at the different farms of Earliana and Bonny Best, and these will be tested carefully and the best strains selected with the object of an improvement in the yield and quality. Earliana suffers to some extent from sun scald in warm districts, and it has been crossed with Burwood Prize and Bonny Best in the hope that these will transmit some of their good qualities in the prolific growth of foliage to the new strain. A new variety from Canada, reputed to be a more leafy type with the characteristics of Earliana, is also being tested.

A large number of new and introduced varieties were under observation also for wilt-resistance. At Bathurst, during the year, bacterial wilt occurred in the plant breeder's variety bed, and this afforded an opportunity of determining apparently resistant varieties, and a strain of Norton (No. 2) and Early Dawn did not appear to be affected by the disease.

Tomato-canning is carried on commercially at Leeton, Windsor, and Bathurst (N.S.W.), and the canner's requirements (a Tomato of bright red color, fine texture, and of good body and flavor) are being carefully studied. A number of varieties were submitted from Yanco to the canning factory at Leeton, and of these, the best were Stone, Improved, Ponderosa, Walker's Selected Recruit, and Livingstone Globe.

THIRTY TONS OF TOMATOES TO THE ACRE.

One of the exhibits at the Los Angeles County Fair, which attracted considerable attention, states the "California Cultivator," was an uprooted Tomato vine carrying more than 80 pounds of fruit, many of which were not full grown. This vine was one of the variety known as the Johnson Tomato, which has been developed by L. C. Johnson, of Pomona, Cal., who, through experimentation and selection, has brought

Last year, after harvesting the first crop in July, Mr. Johnson planted a second crop, which he harvested before the frost killed the vines. For several years Johnson has shipped millions of plants to all parts of California and many other States.

On account of the rapidly growing popularity of this new strain of Tomatoes, Mr. Johnson is producing more plants this year than ever before, and will be able to sell seed to persons who want to raise their own plants.

Western Australia.

Mr. G. W. Wickens, Superintendent of Horticulture, writes the following Notes for June in the "Journal of Agriculture."

Pruning of all deciduous trees should be pushed on with during this month.

Planting may be undertaken wherever the soil is not too wet and sticky.

Young plants, when received from the nursery, should be heeled in carefully so as to prevent the roots drying out. To do this effectively the bundles of ten, in which the nurserymen usually tie up the trees, should be opened, and each tree placed separately in the soil. If this is done as soon as the trees arrive, no harm will result if the planting has to be postponed for some weeks in the months of June or July.

The notes on planting for this month refer to deciduous trees only. Citrus trees give best results if planted at the latter end of August or early in September.

Any San Jose Scale infested orchards which have not received the first spraying mentioned in notes for May, should be treated as early as possible this month.

Citrus growers should examine cracked Oranges for signs of fruit fly, and destroy any found to be infested.

The Orange export season commences this month, and this opportunity is taken again to stress the importance of handling the fruit most carefully when gathering, packing and loading. Bruised fruit and fruit with skin abrasions caused by finger nails will develop moulds and arrive in an unsaleable condition, a loss directly to the sender to the extent of the affected fruit, and indirectly and probably a much greater loss in bearing down the price of sound fruit offering on the same market.

SWANN & Co.

Established 1822.

A century's experience in handling

FRUIT OF ALL DESCRIPTIONS

All Consignments for U.K. will have Personal Supervision and Attention

Account Sales and Cheques despatched immediately after sale.

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London, E.C., EnglandCables:—FIREBRICKS, LONDON
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Fruit Merchants

Established 1882

A Trial Consignment solicited from Growers in all States.

Prompt Settlement.

11 WESTERN MARKET,
Melbourne

out this new strain. Many of the plants in Mr. Johnson's field produced two bushels of fruit last year, and the average yield was about 30 tons to the acre.

The Johnson Tomato is one of the earliest known. The fruit has very few seeds and runs low in acid content. The fruit, which is round and of good medium size and color, ripens evenly all the way through and does not burst at the stem end.

6 Reasons why . . .

NITROPHOSKA I. G.

The Now World Famous Synthetic Fertiliser
Is the BEST All Round Manure for the Fruitgrower

1. **CHEAPEST**—Not per ton, but per content of Pure Plant Food.
2. **COMPLETE**—Contains all three plant foods.
3. **WELL-BALANCED**—The ratio of the three plant foods is such they supply the trees' most urgent requirements during Blossoming.
4. **NITROGEN**—A most essential Plant Food for Fruit Trees, is combined in such a way that its **maximum effect** may be obtained.
5. **READILY AVAILABLE**—May be applied just prior to Blossoming, and will act immediately and continuously.
6. **HIGH CONCENTRATION**—It contains more than twice as much Plant Food as any other complete fertiliser mixture. Therefore there is **less than half the Freight, Cartage and Handling** necessary.

Many Fruitgrowers in Victoria Now Testify to its Worth!

3 lbs. per full bearing tree prior to blossoming constitutes a good dressing.

The Most Ideal CITRUS MANURE Ever Produced

Analysis—

Nitrogen as Nitrate, 4.5 %..	} 16 %
" as Ammonia, 11.5%	
Phosphoric Acid, all soluble..	16.5%
Potash, all available	20 %
Pure Plant Food	52.5%

Urea—46% Nitrogen.

Price Reduced to **£35** ton F.O.R.
 The most concentrated single fertiliser ever produced.

DYES & CHEMICALS [Aust.] LTD.

573-585 Lonsdale Street, Melbourne.

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Sole Distributors for Aust. and N.Z.

Nitrogenous Fertilizers for Apple Orchards

Helpful Comparative Experiences of Growers.

Manurial programme must, however, go hand in hand with rational orchard management—cultivation, pruning, etc.

WHILE EXPERIMENTS are in progress in various parts of Australia in regard to a manurial programme, it is always of interest to check up our experiences by the result of researches in other places.

The application of nitrogenous fertilisers to Apple trees in U.S.A. has shown such noticeable results in free growth, luxuriant foliage, and prodigious yields, that in the opinion of an expert, there is danger of over-production. This information is conveyed by Mr. H. E. Knowlton, of the West Virginia University, and published in "American Fruit Grower Magazine."

"The grower who does not use nitrogen or fertilisers," states Mr. Knowlton, "will profit immensely by doing so. But the grower who has profited by the moderate use of nitrogen, should guard against over enthusiasm."

Continuing, the article states:—

Those familiar with Apple orcharding in the United States will agree that the use of readily available nitrogenous fertilisers has revolutionised methods of culture for this fruit. This is particularly true in those Apple growing sections where soils are shallow and poor and the topography is such that cultivation cannot be practiced because of soil erosion. In these localities nitrogen was the chief need, and when trees were supplied with it they responded with luxuriant foliage, increased growth and almost prodigious yields.

Unquestionably the maintenance of total production of Apples in the United States during the past 15 years in spite of a marked decrease in total number of trees, has been due in large measure to the use of such fertilisers.

With such wonderful results from the use of nitrogenous fertilisers, many growers began to feel that if a little nitrogen would do so much, more of it would give still more marvellous results. And so they have applied excessive amounts, with results, in many instances which were harmful. Some of these bad effects, are, inability of excessively nitrated trees to withstand drought, greater susceptibility to fire blight, and reduction of color of fruit. It may be well, therefore, to review briefly some of the effects of nitrogen fertilisation on Apple trees.

Probably the greatest effect of a quickly available nitrogen

fertiliser from the practical standpoint is on total yield. In one sod orchard yield was increased 200 to 300 per cent. This was on a shallow soil low in fertility, and is an extreme case. In most sod orchards on average soils, yields increases will perhaps not be over 50 per cent. In cultivated orchards on good soil, the increase may be still less. Still one is safe in making the generalisation that on most Apple orchards the application of such fertilisers will markedly increase yield, particularly when measured over a number of years.

This increase in yield, when analysed is found to be caused by increased set of fruit and by more regular blooming. In the experiment noted above fruit set was increased 20 to 70 per cent., depending on the season, while bloom was increased on the average about 50 per cent. Most orchards, however, will not exhibit such marked responses.

On orchards that need nitrogen, the application of it always results in greater

terminal and spur growth

and increases in girth. In some orchards nitrogen applications so increased growth that the trees were two to three times as large after 12 years.

Excessive applications may have harmful effects. On young trees growth may be so great that an over-vegetative condition is produced which may delay fruitfulness. On soils that are shallow and not retentive of moisture, heavily fertilised trees may suffer more from lack of moisture during drought periods than trees not fertilised.

This was very evident in one of the experimental plots in 1924 during a dry spell. The leaves on these trees were actually wilted while those on unfertilised trees were normal in appearance. The explanation probably lies in the excessively large leaf surface borne by the trees fertilised with nitrogen.

Many growers have the erroneous impression that quickly available nitrogen fertilisers increase size of fruit. The writer has never seen any experimental evidence for this. On extremely poor soils Apple trees may be making such poor growth and bearing such sparse foliage that little available elaborated food is present

for fruit tissue production. In such cases nitrogen may increase size. With orchards of average soil fertility, however, little or no increase in size will result. In fact, the fruit may be smaller if there is a moisture deficiency. In the orchard that has already been referred to, the Apples in 1924 on the nitrogen fertilised trees were actually smaller in size than Apples on adjacent trees with the same load of fruit and not fertilised.

Fertilised trees generally carry a heavier crop

and are smaller in consequence unless thinned. The writer has seen over-vigorous York Imperial trees setting and bringing to maturity clusters of Apples of four and even five in number. Under such conditions thinning is essential if a marketable product is to be obtained.

Most fruit growers believe that nitrogen discourages color production. In some experiments this has been uniformly true, particularly when generous applications have been made and the early autumn weather has been rainy and temperatures have been above normal for that season. In a season when conditions have been almost ideal for high color production, this deterrent effect of nitrogen on color production was not so noticeable, but nevertheless present.

The writer admits that under certain conditions moderate applications of nitrogenous fertiliser may increase color, but only on very undervigorous trees—trees that drop their leaves prematurely, due to poor nutritional conditions.

Apple buyers have been complaining for several years that Apples from trees fertilised with nitrate of soda or sulphate of ammonia, do not keep as well as those from trees not fertilised. Unfortunately, the experimental stations have no experimental data on this problem. Experiment stations have initiated investigational work which it is hoped will give information as to the relation of nitrogen fertilisation to keeping quality.

What can the orchardist do to obviate these possible ill effects from the use of readily available nitrogen and still get the undeniably beneficial effects? Probably the best advice that can be given is that he

avoid the excessive use

of these fertilisers. The application of large amounts may increase his

yield, but it will not increase his yield of well-colored fruit.

In years of heavy production and keen competition between sections, growers must pay more attention to quality and think less of quantity.

The consumer already knows that well-colored fruit is more attractive. He is now learning that it also tastes better and keeps longer than poorly colored fruit, and he is going to be willing to pay a premium for it.

Time of application

is another important consideration. The early applications have less of a deterrent effect on color and the greatest effect on set of fruit and on growth. In West Virginia the best growers apply it just after the delayed dormant spray—particularly with varieties that set lightly, like Stayman, Delicious, and Rome. With varieties that normally set heavily, like York, Ben Davis and Transparent, application may be delayed until a few days before bloom.

An autumn application

is being made by some growers. Experimental evidence is lacking, however, as to its relative merits when compared with a spring application. Nitrogen applied in the fall does not seem to affect color as much as a spring application. On the other hand, it probably does not increase set as greatly. Some growers have felt that autumn applications might retard color production on the maturing crop. The writer had the opportunity to make careful observations on this last autumn on Stayman, but could observe no such effect. It should again be emphasised that the weather this autumn was very favorable for color production.

With nitrogen fertilisation should go a rational system of orchard soil management. Nitrogen is not a cure-all. It will not take the place of moisture, so practices must be followed to prevent soil moisture deficits.

Pruning is also important. The more we fertilise, the more we must prune, because of the increased growth that makes the tree more dense.

Queensland.

Seasonable Notes.

YOUNG orchards can be set out now, provided the ground is in good order. Don't make the mistake of planting the trees in improperly prepared land (writes the Queensland Agricultural Journal).

When planting, see that the centre of the hole is slightly higher than the sides, so that the roots, when spread out, will have a downward tendency; set the tree at as nearly as possible the same depth as it was when growing in the nursery, cut off all broken or bruised roots, and spread those that remain evenly, and cover them with fine top soil.

If the land is dry the tree should then be given a good watering, and when the water has soaked in, the hole can be filled up with dry soil. This is far better than watering the trees after the soil has been placed round it and the hole filled up.

Pineapples, when at all likely to be injured by frost, should be protected by a thin covering of bush hay, or similar material. The plantation should be kept well worked and free from weeds, and slow-acting manure, such as bone-dust or island phosphates, can be applied now. Lime can also be applied when necessary. The fruit takes longer to mature at this time of the year, consequently it can be allowed to remain on the plant till partly colored before gathering for the southern markets, or can be fully colored for local use.

Banana plantations must be kept worked and free from weeds, especially if the weather is dry, as a severe check to the plants now, means small fruit later on. Bananas should be allowed to become full before the fruit is cut, as they will carry all right at this time of the year.

Land intended for planting with Bananas or Pineapples during the spring should be got ready now.

Where not already done, vineyards

should be cleaned up ready for pruning—it is, however, too early to prune or to plant out new vineyards.

The Granite Belt, Southern and Central Tablelands.

The planting of all kinds of deciduous fruit trees can be started now, where the land is ready and the trees are to hand, as early planted trees become well established before spring, and thus get a good start. Be very careful what you plant and stick to varieties of proved merit.

When land is intended for planting this season, see that it is well prepared and well sweetened before the trees are put in.

Slowly acting manures—such as bone-dust, meatworks manure, or island phosphates—can be applied now, as they are not liable to be washed out of the soil, and they will be available for the use of the trees when they start growth in spring. Lime can also be applied where required. Badly drained land should be attended to, as no fruit trees will thrive with stagnant water lying round their roots.

On the Downs and Tablelands all kinds of fruit trees can be pruned now, and vines can be pruned in any district where there is no danger from late frosts.

All main-crop Lemons should be cut by this time, as if allowed to remain they only become overgrown and suitable for the manufacture of peel, whereas, if cut now they can be used during the hot weather.

Queensland Bananas.

Reports from Cairns state that the Bananas from North Queensland are more than equal to the best quality ever imported from Fiji. From the Mulgrave Plantations Ltd., near Cairns, specimen cases carrying 24 doz. choice Bananas are being sent to the Victorian Railways with the prospect of the pack being favorably displayed.

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Harcourt Fruit Supply Co. Ltd.
Victorian Central Citrus Assn. Ltd.

Tasmania: State Fruit Advisory Board.
New South Wales: N.S.W. Central Citrus Assn. Ltd.
Batlow Packing House Co-op. Soc. Ltd.

New South Wales.

News and Notes.

N.S.W. Central Citrus Association.

Report of Year's Activities.

Useful Work Accomplished.

THE annual report of the Central Citrus Association of New South Wales, signed by the manager, Mr. H. G. Such, gives an interesting survey of the citrus situation of New South Wales.

The Central Citrus Association of N.S.W. handled 294,740 bushels from the following sources:—Griffith, 139,883; Gosford, 50,637; Yenda, 28,110; Wyong, 22,918; Central Mangrove, 21,043; McKillop & Sons, 14,938; Yanco, 8,700; Ross-Reid Bros., 4,331; Heane Bros., 3,074; J. Holroyd & Son, 1,096. The variety of productions were in the following percentages:—Valencias 47.90, Navels 37.36, Commons 7.98, Mandarins 4.28, Lemons 2.04, Grape Fruit .40.

The distribution for Sydney, interstate, and export markets, was in the following percentage proportions:—Sydney 30.91, New Zealand 19.88, Melbourne 19.32, country 13.55, Queensland 11.74, England and overseas 2.16, Newcastle 2.05, Tasmania .37.

In addition to the increase because of the prolific season, there were first crops from large areas planted in 1919-22, thus giving a foretaste of the near future, when recent plantings come into full bearing.

Through the efforts of the C.C.A. staff, the over supply of any market was largely avoided. Without a Central Organisation the situation would have been serious, as revealed by the over supply when an important market (Christchurch), was suddenly over supplied by fruit from unorganised growers.

Replying to the criticism that the C.C.A. handles less than 10 per cent. of the total New South Wales pack, the report states that the 3,500,000 bushel pack for 1928-9 includes the whole of the crop of Mandarins, Lemons and Commons, which make up more than 60 per cent. of the whole State crop, or say, 2,000,000 cases. In these sections, C.C.A. members are little concerned, only 14.3 per cent. of their packing including these varieties.

Of a total State crop of 1,500,000 cases of Navels and Valencias, C.C.A. members' packs were at least 17 per cent. of the State's production.

Continuing, the report states:—

The importance of the standardised pack is indicated by the relation it bears to unorganised fruit on the various outside markets. Sydney market, which is almost the only possible outlet for most growers' fruit, took only 31 per cent. of our pack, the balance of 69 per cent. being sent to country, interstate or overseas. Brisbane, for example, received until December 30, a total of

41,000 Valencias, of which 66 per cent. was sent direct by our members, and part of the balance was packing house fruit, purchased on the Sydney market. New Zealand took 56,000 bushels of Navels, Valencias and Commons, or 50.5 per cent. of the total of these varieties imported from Australia by all N.Z. ports. Of the fruit sent to the ports to which C.C.A. exported 56 per cent. of the total of all Navels, Valencias, and Commons was sent by members.

In Victoria, the packing house proportion of the total N.S.W. despatches was about 25 per cent. of a total of 236,000, of which about half were Commons and Mandarins, scarcely

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The citrus crop in N.S.W. for 1928-9, was estimated at 3,500,000 bushels, this being a record. The largest previous crop was 2,300,000 bushels in 1925-6. The heavy crop of Apples set a low standard of values by which citrus was affected. Prices were lower for all varieties of citrus than for any previously recorded year, and, except for preferred sizes and qualities barely returned the cost of production.

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Murdoch Bros., and A. J. Walshe &
Co., Hobart, Tasmania.

any of which were sent by C.C.A. So far as export overseas to other than New Zealand markets is concerned, practically the whole was packing house fruit. It will be seen, therefore, that members' interests are tending to develop largely outside of the Sydney market, and that in this regard the C.C.A. operations differ widely from those of similar organisations in Victoria and South Australia, which need to devote their

main energies to a control of prices, agents and supplies on one market, viz., Melbourne. The C.C.A. needs to be continually in touch with these outside markets, to prevent overlapping of effort or overloading of markets.

Taking an assumed State crop of 3,500,000 cases of all varieties, this indicates that the unorganised growers' fruit was almost entirely disposed of on the Sydney market, as what was exported was mainly bought there by speculators, whilst in the case of the C.C.A. members' fruit,

sales manager. Interstate and New Zealand markets were visited during the year.

Summary of Interstate and Export Trade of N.S.W.

To	Members	
	C.C.A.	Out-siders.
	%	%
N.Z. (Oranges only)	50.5	49.5
Brisbane (Val. only)	66	33
Melbourne (Val. & Navels)	50	50
Overseas (Val. & Navels)	98	2

Although New Zealand markets returned a price slightly lower than some Australian markets, the export trade there was of primary importance in stabilising distribution as a whole. In 1926-7 the C.C.A. exported 18.9 per cent. of all N.S.W. citrus to New Zealand. In 1928-29 this had increased to 36.43 per cent. This refers to all citrus. However, of Navels, Valencia's and Commons, the C.C.A. total was 50.5 per cent. The C.C.A. has now assumed a commanding position in N.Z. markets. A complete study and regular supplies of the various New Zealand ports has assured this.

Melbourne.—Murrumbidgee irrigation fruit went there largely. Of the N.S.W. total of 236,000 cases to Melbourne, C.C.A. members sent 57,000 (25 per cent.). This, however, includes Mandarin's and Commons, so that the C.C.A. percentage for Navels and Valencia's is probably 50 per cent. Due to the heavy N.S.W. supplies, it was found difficult to maintain steady price levels, and on one occasion, when an attempt was made towards stabilisation by stopping C.C.A. fruit, it was found that the diverted brands were being bought up in Sydney and sent to Melbourne for speculators' profit. A sum of £247 was paid to V.C.C.A. last season as levies on C.C.A. fruit to Melbourne, a somewhat unexpected expense, as never before had the quantities sent there been so large.

The Melbourne market may not be so attractive in 1929, and it is quite possible Sydney may receive Victorian and South Australian citrus.

Brisbane.—A normal crop there of all varieties did not allow higher prices than Sydney parity, until almost the end of the local Valencia season.

Of N.S.W. fruit sent to Brisbane, the C.C.A.'s proportion was 66 per cent. As the main crops fell off, and the position stabilised, Gieves resumed buying and took regular weekly supplies at satisfactory rates. Packing house fruit commands the first preference in Queensland, and

will always secure prices some shillings above outsiders' fruit of similar quality.

Tasmania.—Comparative figures for earlier years are not available. In the absence of proper markets only f.o.b. sales were made of about 11,000 cases. This trade can be developed. Standardised fruit is appreciated. From the sales manager's survey substantial increases in Tasmanian sales are expected.

Overseas (excluding N.Z.).—Owing to the shipping strike the "Esperance Bay" shipment of 5,000 cases was unsatisfactory. The fruit was somewhat wasty and met a low market.

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which totalled 294,740 cases, the following was the disposition:—

Sent out of State:—157,638 cases—53.5 per cent. of C.A. pack.

Sold out of Sydney in N.S.W. (country, etc.):—45,989 cases—15.6 per cent. C.A. pack.

Sold in Sydney:—91,113 cases—30.9 per cent. C.A. pack.

With an increased income in sight, and the renewed support of Gosford, an extension of C.C.A. activities became possible, and Mr. P. Macdermott joined the staff primarily as

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The prices were from 9/- to 16/- with an expense of at least 8/6. It is evident, states the report, that South Africa will dominate English markets for Navels and Valencia's. Large quantities from South Africa caused general lowering in values and at least seven times the present quantity is in sight. Due to low costs of labor and freight, a figure of 13/6 per case (1-1/3 bushels), is reported to be profitable, while the present

cost of N.S.W. fruit laid down in London is at least 12/-. Large imports now arrive from Brazil and Argentine in England. These seem likely to continue. Small quantities were sent to Singapore and Java. This trade should be increased, as shipping facilities are improving. Shipments of Valencias were sent to Madras. Enquiries are to hand from India. With the recent opening of cool stores in Colombo, an op-

portunity to supply both Bombay and Calcutta is likely to arise.

An interesting development occurred in the Canadian market, which bought from C.C.A. 797 one and one-third bushel cases of Valencias at C.I.F. prices. This did not arrive in good order, and a claim was made for adjustment. The nett result, however, was on a par with Sydney values. A further order for 3,000 cases could not be filled for lack of

shipping space, whilst enquiries for quotations were recovered from two inland towns.

Seeing that California's potential crop cannot greatly increase in the future, and the tendency is towards preference to Australian products, this market appears to offer a promising future for our surplus Valencias.

Sydney Market.—Sydney was not of such relative importance to C.C.A. members as in previous years. Much of the total of 91,000 cases was unsuitable for outside markets. Sales were made through Association agents as follows:—The Producers' Distributing Society, Batchelor, Son & Mitchell, Associated Growers' Selling Agency, John Jenkins, Mow, Sang & co.; while small quantities were sold through C. M. McLeod, R. J. Brown and T. Byrne. All agents carried out their duties satisfactorily.

Sydney Fruit Barrows.—By vigorous efforts, the barrows which were to be eliminated were retained.

Big Navel Oranges.—£250 was spent in an advertising campaign which assisted to relieve the market of big Navel Oranges.

Railways.—An appreciated visitor was Mr. H. Clapp. Now the N.S.W. Railways are pushing citrus. During the Navel season, they operated principally on large Navels, but sold greatly increased quantities of Mandarins and other citrus. Quite 10,000 Navels almost wholly from members were sold, whilst an equal quantity of Valencias at least, were disposed of. It is understood that greater efforts to dispose of larger quantities next season are under contemplation.

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Oranges for Drinks.—The trade is growing. Fifty big stands and most soft drink purveyors around Sydney sell expressed Orange juice. In country towns the increase of extractors is marked, but the concentrated juice is most heavily used. O.T., Schweppes, Gows, etc., bought at least 100,000 bushels. Allowing 20 cases weekly for the big Orange shops, another 50,000 cases is accounted for and more Oranges are being drunk by the public in their homes. The C.C.A. has consistently fostered this trade by selling extractors, assisting new stands with ad-

Preservative Processes.—Californian practice is tending away from the use of borax (Brogdex or similar), bicarbonate of soda being used instead. This is being adopted at Griffith. Departmental tests are being continued.

Membership.—This was increased by one packing house (Yanco), and a private member, J. Holroyd & Son (Griffith).

General.—Some of the other work of the C.C.A. includes:—Purchasing and maintaining supplies of cases (300,200); supervision return of empty cases; securing savings on Sydney cartage (of ½d.); conducting all shipping arrangements (no charge); purchasing nails (securing 10 per cent. discounts); securing case rebates on exported cases (58,236 at 1/6); Griffith and Yenda summer fruit.

Apart from the work involved in the above, the C.C.A. has been in close touch with the Government Departments, both State and Federal in regard to marketing and cultural matters. Its representative sits upon the State Fruit Marketing Committee and upon the Board of the Fruit-growers' Federation. It was very closely connected with the Bud Selection Co-op. Co. formation, and is represented upon its Board.

As one of five members of a Special Committee on Fruit Marketing, selected at the last Fruitgrowers' Federation, Mr. H. G. Such was selected by a considerable majority.

N.S.W. FRUITGROWERS' FEDERATION.

A meeting of the Board of the N.S.W. Fruitgrowers' Federation was held at Sydney on April 26, General Heane presiding.

New Applications.—The Organiser reported the formation of new Associations in the Hawkesbury district.

Fertilisers.—It was decided to submit evidence to the Tariff Board in favor of a reduction of duty on synthetic fertilisers.

Immature Oranges.—It was decided to seek an amendment of the regulations so that the maturity test should include a sugar and acid test instead of acid test only. Navel Oranges from some districts only partially colored were sweet and palatable, though the test showed higher acid content than laid down in the regulations.

Fruit for Canada and the East.—It was decided to share in the expenses of sending a representative to Canada and the East to improve the markets for Australian fruit.

Cool Storage.—At the growers' request, Mr. Broadfoot, of the Agricultural Department, visited Victoria to investigate cool storage there, and his preliminary report was before the meeting; after a further visit his full report would be published.

Sydney Markets.—It was reported that no definite conclusion had been reached by the Fruit Marketing Committee, but much investigational work had been done.

Bud Selection.—The Secretary reported that the Bud Selection Society had been unable to fulfil the orders

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vertising matter, press publicity and running drink stands for publicity.

The C.C.A. has regularly represented to the Health Department, the need for exclusion of artificial citrus drinks, and in this direction an effective change is imminent. The effect of Orange drink shops has been most marked this summer, as during January to March there was a large demand for low-grade Late Valencias, quite unsuitable for retailers, and relatively high prices were obtained for what in most years would have been unsaleable.

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received from nurserymen for buds owing to the adverse weather conditions having affected the selected trees. All the available buds, however, had been secured and used by nurserymen.

Interstate Conference.—Discussion took place as to the advisability of reviving the Annual Interstate Conferences which were held for a long number of years, but were allowed to lapse about three years ago, and it was decided to communicate with the other States to ascertain their views.

Canned Fruits Industry

Export Bounty Conditions.

The Australian Fruit Canners' Association has received from the Prime Minister details of the Government's proposals for assistance in the export of the 1928-9 pack of canned Peaches to Great Britain, viz.:—

1. A subsidy not exceeding 1/- per dozen 30 oz. tins, subject to the following conditions:—

(a) That the Department of Markets and Transport is satisfied that the best price has been obtained for the fruit.

(b) That the subsidy be reduced by 1d. per dozen for every 1d. per dozen which the fruit realises in excess of 6/6 per dozen net f.o.b. Australian port.

(c) That the bounty be paid to each cannery only on the production of satisfactory evidence that an average of not less than £9 per ton has been paid to the growers for Peaches delivered at growers' siding or at country cannery.

(d) That any future application to the Commonwealth Government for financial assistance to be considered in the light of the industry's attitude to the recommendations made public in the report of the Development and Migration Commission on the Canned Fruits Industry.

2. (a) Subject to the Governments of New South Wales and Victoria appointing a Board of Management to control the canneries at Leeton, Kyabram, Ardmona and Shepparton, and subject to the Governments of N.S.W. and Victoria and the Board of Management agreeing to adopt and make effective substantially the other recommendations of the Development

News and Notes.

and Migration Commission in its report on the canned fruits industry, the above decision is varied as follows:—

The Commonwealth bounty on canned Peaches of the 1928-29 pack exported to Great Britain shall be at the rate of 1/6 per dozen 30 oz. tins provided:—

(i) That the bounty be not paid to any cannery that does not export at least 25 per cent. of the Peaches packed in that cannery during the 1928-29 season.

(ii) That the bounty be paid to each cannery only on the production of evidence that an average of not less than £9 per ton has been paid to the growers for Peaches delivered at growers' siding or at country cannery.

CANNED FRUITS—1929 SEASON'S EXPORTS.

The Department of Markets and Transport advises as follows, under date May 7:—

The exports of canned fruits to various destinations from the commencement of the season to April 30, 1929, were as follows:—

Destination.	Apricots. Doz. 30 oz.	Peaches. Doz. 30 oz.	Pears. Doz. 30 oz.	Total. Doz. 30 oz.
United Kingdom	63,473	66,856	40,202	170,531
New Zealand	4,974	17,015	273	22,262
The East	464	920	988	2,322
Canada	300	6,220	740	7,260
Miscellaneous	178	319	214	711
Totals	69,389	91,330	42,367	203,086

(iii) That all other conditions as applied last year to the granting of the bounty shall apply.

(b) That the Commonwealth Government indicate to the industry that consideration will be given to the payment of a bounty on Peaches exported from the 1929-30 and 1930-31 packs, but not to exceed the equivalent of two-thirds and one-third respectively of the amount per dozen 30 oz. tins payable on the 1928-29 pack, provided:—

(i) That the Board of Trade, after consideration prior to each season, decide that assistance is desirable and necessary.

(ii) That the form of assistance and the conditions and method of assessing the assistance need not necessarily conform to the form, conditions and method adopted for the payment as recommended for the 1928-29 pack.

The Australian Fruit Canners' Association advise that the total sales from the commencement of the season to May 11, 1929, are as under:—

	Cases.
Peaches (halves)	64,600
Peaches (sliced)	66,145
Apricots	48,080
Pears	41,820
	220,645

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Sales in England.

Favorable Indication.

Australia Has a Record Crop of Over 62,000 Tons.

SALES of Australian dried fruits in England for the week ending 9th May were 3,534 tons. Included were 2,741 tons 1928 Sultananas, average £30/10/8 per ton. Of the new season's Sultananas, 63 tons made £50/0/5 per ton. New season's Currants made £47/8/8 per ton (242 tons), and 478 tons new season's Lexias realised an average of £23/2/1 per ton. Stocks of Australian dried fruit are held at London, Liverpool, Bristol, and Glasgow.

Present indications are that the Australian harvest will exceed 62,500 tons, which is easily the record production of the Commonwealth. Of this crop at least 50,000 tons must be exported (states the Chairman of the Commonwealth Dried Fruit Export Control Board, Mr. W. C. F. Thomas). New Zealand, Canada and South Africa may be expected to absorb from 6,000 to 6,500 tons, leaving about 43,500 to 44,000 tons for the British market. This is about 8,000 tons in excess of the previous highest export during the season 1927, but, as there should be about 8,000 tons of Currants and 3,000 tons of Lexias shipped to British ports, it follows that about 32,000 tons of Sultananas will go to London and other British ports. The steady clearance at moderate prices may be anticipated, and the reception by the market of the better quality of Sultananas watched with interest. The value of the Imperial preference to Empire-grown fruit is of great importance to producers, particularly in face of the dumping of large quantities of American fruit on the British market during the last two years.

The sales of Australian fruit in Britain during the past four weeks represented a total value of over £250,000.

AUSTRALIA AND CALIFORNIA.

While expressing sympathy to fellow producers of dried fruits in California because of the disastrous freeze in that country, it is expected that Australian dried fruit producers will have a more profitable season. Already last season's carry-over in England has been sold, and there is a more optimistic tone in the market in relation to new season's fruit.

Further advices are awaited as regards the damage done by the frost in California and as to the tonnage harvested and dried.

The quality of Australian dried

vine fruits this season is far in advance of last season's quality.

On the subject of organisation in the dried fruits industry, careful observers have noted the essential difference between the methods employed in California and in Australia. In California a large number of growers have linked up with the Sun Maid Raisin Growers' Association, which Association, however, operated a packing and distributing organisation in competition with private enterprise packers doing the same work.

In Australia, growers formed the Australian Dried Fruits Association, and took the packers and distributors into the organisation, limiting the wholesale trade into certain channels.

While as regards other sections of the U.S.A. fruit industry, particularly on the Pacific Coast, the growers' organisations appear to be much ahead of Australia, yet in the dried fruits industry the Australian system of organisation certainly seems to be the better one.

It would seem that in the various branches of the industry the co-operation of the growers and the trade is desirable.

THE CITRUS POSITION.**V.C.C.A. Replies to "Seccateur."**

As we go to press a letter is to hand from Mr. B. S. B. Cook, Manager and Secretary of the Victorian Central Citrus Association, stating the article by "Seccateur" last issue, containing good constructive criticism, was spoiled by inaccurate figures.

We will publish the letter in full next issue: meantime the following is a summary:—

(1) Instead of supplies of fruit through V.C.C.A. channels diminishing, the opposite is the case. With an increased crop of 70,000 cases of Victorian and border citrus, the V.C.C.A. handled an additional 91,000 cases, plus 12,000 from non-members. (2) whereas "Seccateur" held up S. Australia as the model or organisation, there is no Central Citrus Association in that State, only the Murray River section, having 80 per cent. control. In S. Australia the V.C.C.A. was held up as a favorable example. (3) The idea of a Board of 22 members—a Director from each district—was rejected after full discussion at the recent conference.

The letter concludes by agreeing that the future lies "in the creation of an atmosphere of mutual confidence."

AUSTRALIAN EXPORTS OF CANNED FRUITS, 1927-28.

Statistics covering the Australian Canned Fruit exports of 1927-28, show a good trade recovery when compared with the exports of the preceding year. The total exports of canned fruit in 1926-27, were 10,146,979 lbs., valued at £239,911, and in 1927-28, 21,894,721 lbs., valued at £446,034, an increase of 11,747,742 lbs., £206,123. Exports to the United Kingdom in 1926-27 (4,787,745 lb., £106,966), were increased by £254,878 (13,301,298 lbs.), to Canada (349,335 lbs., £7,039), by £586 (28,245 lbs.), whilst the exports to New Zealand (4,305,962 lbs., £108,713), and other countries (732,182 lbs., £17,779), decreased by £45,504 (1,407,865 lb.), and £3,837 (173,936 lbs.), respectively.

Are You Planting Fruit Trees this Season?

IF SO, DO NOT
FORGET THAT
WE HAVE
AMPLE SUP-
PLIES TO
OFFER.

Trees grown at Kinglake and Yarra Glen

Larger, Stronger, Healthier than ever

Apples.—Jonathan, Five Crown, Rome Beauty, Cleopatra, Granny Smith, Delicious, Democrat, Statesman, etc.

Also Pears, Plums, Peaches, Apricots, Quinces. Best varieties.

We must sell and are prepared to sacrifice the best trees for one season at prices far below the cost of production. Do not miss this chance—

Write now.

JAMES W. LAWREY, Kinglake Nurseries, Yarra Glen, Vic.

FRUIT TREES

From the Firm of Forty Years' Standing

Forty years' trading has built up a reputation for quality in every variety of Goodman's Trees. Whatever the climatic conditions, you can rest assured of heaviest crops and best marketable fruits from Goodman's Trees. Send in your order now for this Winter's Planting. Big stocks available; but there are heavy demands also, so write at once.

APPLES

Delicious, Granny Smith, Jonathan, Cleopatra (N.Y.P.), Dunn's, Romes, Lordons, Yates, Gravenstein, Winesap (Stayman's), Rockwood, Statesman, Stormer, Tasma (Democrat).

PEACHES

Bell's November (Dunhelm), Briggs', Hale's, High's, Levis Cling, Pelora, Peak, Phillips', Fullar's, Sim's, Triumph and Wiggins.

JAPANESE PLUMS

Apple, Ballena, Burbank, Kelsey, Delaware, October, Purple, Santa Rosa, Satsuma, Wickson, Wilson.

Full list of varieties and details supplied in our FREE CATALOGUE

GET YOUR COPY NOW.

C. J. GOODMAN

Picnic Point Nurseries

BAIRNSDALE, Vic.

(4V. MCF.)

PLUMS

Golden Drop, Damsons, Green Gage, Jefferson, Magnum Bonum, Pond's and President.

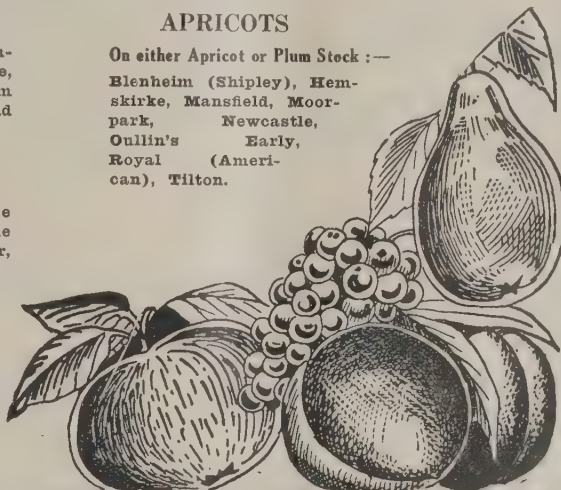
PRUNES

D'Agen (true French), Robe de Sargeant, Splendour, Sugar.

APRICOTS

On either Apricot or Plum Stock:—

Elenheim (Shipley), Hemskirke, Mansfield, Moorpark, Newcastle, Oullin's Early, Royal (American), Tilton.



FIGHTING INSECT PESTS IN THE ORCHARD.

Vine Scale on Japanese Plum Trees.

This is one of the largest scale insects in Victoria and elsewhere on Plums, vines, etc. It is a dark brown color. It spreads very rapidly and causes much damage. Spray with red oil, Volck, or any of the light oil sprays.

Scales on Fruit Trees.

After pruning it is advisable to spray trees with oil sprays or lime sulphur to destroy the scales and their eggs. Red oil, Volck, or any of the light oils will give good results. Burn all prunings.

Painted Apple Moth.

The tufted caterpillars of this moth are still to be found in orchards on Apple and other fruit trees. They are particularly destructive to the fruit spurs. Spray with arsenate of lead, 1 in 25 (paste), or arsenate of lead (powder), 1½lb., water 50 gallons.

Black Aphids of Citrus.

The young growths of citrus trees are now becoming badly infested with these destructive insects. It is advisable to spray at once with nicotine sulphate or black-leaf 40.

Woolly Aphids.

These insects are now becoming rather numerous on Apple trees. A winter spray that has given good results is made up as follows:—

Nicotine sulphate, 1 pint.

Red oil, 1 gallon.

To prepare sufficient mixture to treat 100 trees, 1lb. soap should be boiled in a gallon of water till dissolved; add 1 gallon red oil, and mix thoroughly; then add 1 pint of nicotine sulphate, and after mixing the whole for a few minutes, add 80 gallons of water. If the water is hard, a small piece of washing soda should be added. The best time to apply this combination spray is during the winter months, when the trees are free of leaves.

In the warmer weather the woolly aphid parasite (*Aphelinus mali*) should be liberated on trees affected with woolly aphids.

Codlin or Codling Moth.

Remove all bandages and dip same in boiling water to destroy the chrysalids and over winter larvae. All loose bark should also be removed and destroyed, as this also shelters the chrysalids and larvae.

Light-brown Apple Moth.

The caterpillars of this moth are often found attacking "Yates" Apples

late in the season. If observed, spray with arsenate of lead paste or powder.

Black Cherry Aphids.

To kill the eggs of these very destructive insects, spray with red oil, or other miscible oil, at a strength of 1 in 20 in winter. Lime sulphur spray and Volck spraying oil will also give good results.

Pear Mite (*Phytoptus*).

All fallen leaves should be raked up and destroyed by burning. Trees should be sprayed with lime sulphur or oil sprays.

Peach Aphids.

Spray with red oil in early spring or late winter at a strength of 1 in 30.

Red Spider and Bryobia Mite.

Spray when trees are dormant with red oil or Volck spraying oil, 1 in 30, to destroy the eggs of these destructive mites (red spiders).

A SHADY CUSTOMER.

"Well, did you discover anything in Stump's past life that we can use against him?"

"Not a thing. All he ever did before he came here was to sell sun blinds."

"Why, that's just what we want. We'll say he has been mixed up in some decidedly shady transactions."

Classified Advertisements.

Readers can make use of this column for their advertisements of "Wanted" or "For Sale."

Rates:—Casual, 2d. per word; or contract, 1½d. per word.

For Sale.

A Profitable 40-Acre, Irrigated Fruit Farm, rising ten years. Bad health. Apply Box 29, Griffith, N.S.W.

CATALOGUE RECEIVED.

F. Ferguson & Son, head office, Hurstville, N.S.W. This firm has just issued their fruit and general catalogue for 1929-30. Included are Apples (early, mid-season and late varieties), Custard Apples, Apricots, Bananas, Cherries, Oranges, Mandarins, Lemons, Limes, Shaddocks, Citrons, Grape Fruit, Figs, Grape vines, Grapes on resistant stock, Guavas, Loquats, Mulberries, Medlars, nuts of various sorts, Nectarines, Olives, Peaches, Pears, Persimmons, Plums, Prunes, Japanese Plums, Quinces, small fruits or berry fruits, Rhubarb, Strawberries, varieties of fruit recommended for home orchard planting. Novelty Roses and general list of Roses, ornamental trees, shrubs and flowering plants, hardy climbing plants, Cannas, farm seeds, vegetable seeds. Well illustrated. A spraying chart is given in Messrs. Fergusons' catalogue. This catalogue is their 82nd annual issue. Usual hints on planting are also given.

You Must "Pay In" First



You can't draw cheques on the Bank of Fertility unless there's something there to "meet them". Or put it this way: You can't take the elements of fertility from the soil unless you have taken care to see that they were there in the first place. Your crops are drawing freely on the soil's nitrogen supplies, and if that soil is to return profitable crops indefinitely, the nitrogen has to be replenished.

A variety of ways of doing so can be found, but the EASIEST and least EXPENSIVE—consequently the MOST

PROFITABLE—is by the use of

Sulphate of Ammonia

Australia's best and most economical nitrogenous fertiliser—now supplied in a dry, free-running, "neutral" state that prevents caking.

Literature from

THE METROPOLITAN GAS COMPANY,
196 Flinders Street, Melbourne.

Telephone: Central 8162.

SA 6/28

DENNIS & COOPER LTD.

Covent Garden, London, England

FRUIT BROKERS & COMMISSION SALESMEN

Financial Facilities Offered

APPLE and PEAR SPECIALISTS

MAKE YOUR SHIPMENTS THROUGH

Messrs. S. J. Perry & Co. 364 LITTLE COLLINS ST.
MELBOURNE

Phone: Cent. 3480

Who will give all information

"To Choose the Best is Wisdom"

The "Lightning" Fruit Grader Co.

SPECIALIZES IN ALL CLASSES OF MACHINES FOR
CITRUS AND PACKING HOUSES

and concentrates solely on this class of manufacturing

YOUR INTEREST IS OURS

We Supply Ethylene Gas for Coloring Citrus Fruits

It will pay you to trade with a firm who have a reputation for Quality and Service.
Plans and specifications supplied for the equipment of Modern Packing Houses.

5 Hoddle Street, Collingwood

Cable and Telegram Address: "Lightning," Melbourne

South Australian Plums in London

Condition Fairly Satisfactory.

Large-sized Fruit of "Golden Drop" and "Shipper" Plums Desired.

The general manager of the Government Produce Department (Mr. G. A. W. Pope) has received the following from the Trade Commissioner for South Australia (Mr. R. M. K. Lewis), dated in London 4/4/29:—

The shipment of Plums per R.M.S. "Orvieto," which sailed on February 21, 1929, arrived at Covent Garden Market on April 2. The trays presented a very attractive appearance. The general condition of the Plums was fairly good, but many of them were showing "bladdery" and wilted. The "Shipper" Plums unfortunately were very wasty. This is much to be regretted, as undoubtedly this variety of Plums has no equal on this market. On the question of size of Plums, you have, by no means, come up to market requirements.

The various varieties are too small, and it can be said approximately they run about 12 to 15 to the pound. This means that they will be sold by the retail trade by the pound and not at per Plum. The South African Kelsey Plums now selling are approxi-

mately three times as big as any of our Plums, and from tests we made this variety was running at three Plums to the pound, as against our 12 to 15 to the lb.

For your information, I would say that the Kelsey variety of Plum is selling at 6d. per Plum, and in some cases more—they are mostly being sold in punnets of five Plums at a price of 2/6 to 3/- per punnet.

The South African Plum shipments are more or less at an end; the Kelsey variety is about the only Plum now marketing. This fact is in our favor, and has allowed our smaller Plums to sell more readily than they would have done had we had to face more intensive production from South African sources. At the time of writing, we are out of approximately half the shipment, and prices range 3/- to 5/- per tray. There seems good prospects of future business with the two varieties, Golden Drop and Shipper.

I am convinced that, provided we can market these two Plums in good condition and of a bolder size, we are certain to do well with them year by year during the month of April, as at this particular period of the year South African shipments are rapidly diminishing, and we could more or less have the luxury trade to ourselves.

"I think we should tak' a walk doon the toon an' see the shops, lassie," said Sandy to his wife.

"But they're a' shut," she replied. "D'ye think I didna ken that?" he replied. "I'm no' daft a'thegither."

PRINCE VISITS COVENT GARDEN.

The Prince of Wales paid a surprise visit to the Covent Garden Market on March 22, states the "Fruit, Flower and Vegetable Trades' Journal."

He arrived at 7 a.m., and was received by Mr. George Monro, who introduced him to Major E. G. Monro, Chairman of the Covent Garden Tenants' Association, and Mr. Irving, Superintendent of Covent Garden Market.

The Prince went through the flower market, and then expressed a wish to see the fruit market. He concluded his tour by an inspection of Messrs. T. J. Poupert's premises in Long Acre. The Prince was interested to find that a large percentage of the flowers were home-grown and that so much of the fruit was sent by our overseas Dominions.

"NO FRIEND."

Mistress: "When I engaged you, Jane, you told me you had no men friends. Now, nearly every evening when I come into the kitchen, I find a man here."

Jane: "Bless you, mum, 'e ain't no friend o' mine!"

Mistress: "Good gracious! Who is he, then?"

Jane: "He's my 'usband."

PINUS INSIGNIS

18-24 inch, £1. per 100.

24-36 inch, £2. per 100.

Cash with Order.

On Rail Ivanhoe

Stirling Nurseries PTY. LTD.
Ivanhoe, Melbourne

"FRUIT WORLD ANNUAL."

Comprehensive review of Australian and New Zealand fruit industry—1/8 post free.

"The Fruit World," Box 1944 G.P.O., Melbourne.

WESTERN AUSTRALIA.**Department of Agriculture.**

Minister for Agriculture—H. Millington, M.L.A.
 Director of Agriculture—Geo. L. Sutton.
 Secretary, Department of Agriculture—L. St. J. Jones.
 Superintendent of Horticulture—Geo. W. Wickens.
 Viticulturist.—H. K. Johns.
 Port Inspector (Fremantle)—T. Hooper.
 Orchard Supervisors—D. L. Breen, A. Flintoff, W. H. Read, R. L. Cailes, S. E. Bennett, W. P. Fears, V. Cahill, A. C. Vaughan, R. C. Owen, C. Simmons.
 Agricultural Adviser—H. R. Powell.
 Port and Market Inspector (Perth)—B. J. Gartland.

Science.

Plant Pathologist—Vacant (previously occupied by Mr. W. M. Carne).
 Botanist—C. A. Gardner.
 Plant Nutrition Officer—Dr. Teakle.
 Economic Entomologist—L. J. Newman.

Very little irrigation is carried out in W.A. (states Mr. A. R. C. Clifton, officer in charge of irrigation). The only Government irrigation undertaking is at Harvey, 86 miles south of Perth, the irrigable area being approximately 4,000 acres. The water, which gravitates from a storage reservoir in the hills, is chiefly used for growing summer fodder crops for dairying. There are, however, several hundred acres of citrus orchards irrigated in the area.

Outside Harvey there are numerous small privately owned irrigation schemes, the water being used for growing summer fodders for dairying, vegetables (potatoes), and citrus.

SOUTH AUSTRALIA.**Organisation and Staff of Horticultural Branch in South Australian Department of Agriculture, 1929.**

Minister of Agriculture—Hon. J. Cowan, M.L.C.
 Director of Agriculture—Prof. A. J. Perkins (Permanent Head of Department).
 Chief Horticultural Instructor and Inspector—Geo. Quinn.
 Senior Fruit Inspector—O. Brown.
 Assistant Fruit Inspector—L. M. Brown.
 Assistant Fruit Inspector—E. W. Revell.
 Botanical Assistant and Seed Expert—E. W. Pritchard.
 Field Staff—Horticultural Instructors and Inspectors.
 Northern Districts—J. B. Harris, Gawler.
 Mount Lofty Ranges District—E. Leishman, Mt. Lofty.
 Southern Districts—C. H. Beaumont, Adelaide.

(Continued on Page xviii.)

Fertilizer**Nitrate of Soda**

It is not whether you can afford to fertilise, but how much you will lose by not doing so.
 The man who does, obtains top prices and increases his yield.

Why?

Because Nitrogen is the ingredient which exerts a predominant influence on formation of the foliage and all new growth, and NITRATE OF SODA has Nitrogen readily and totally available for plant food without further change and does not exhaust the lime contents of soil.

Nitrate of Soda

- (1) Is entirely soluble, clean to handle, and has no objectionable smell.
- (2) Owing to its solubility and ready availability may be applied at any time that Nitrogen is considered to be required.
- (3) It may be applied broadcast on the surface of the soil or it may be dissolved in water and used as a liquid manure.
- (4) It penetrates through the soil particles as soon as dissolved, and encourages the downward trend of roots.
- (5) It does not make the soil acid or sour.

Nitrate of Soda**Increasing Yield of Citrus Trees**

Mr. F. W. PRATT, "Dane Hill Orchard," Pennant Hills West, N.S.W., writes, November, 1927:—

"Of all fertilisers I find that Citrus responds more quickly—almost immediately to NITRATE OF SODA, and in my opinion it stands easily first—all this season my consignments have sold speedily at TOP market rates."

Nitrate of Soda

is an important factor in fruit growing. Orchards which receive a reasonable amount of care and attention, including a judicious and liberal use of suitable fertilisers are invariably very profitable investments.

In the Agricultural Gazette of N.S.W., July 1st, 1927—Mr. W. B. Stokes, Orchard Inspector, and Mr. R. J. Benton, Fruit Inspector, speak very highly of NITRATE OF SODA.

Fruit Trees are living organisms, deriving nourishment from air, water, soil, and controlled by light and heat and considerably helped by nature's own fertiliser—NITRATE OF SODA.

VEGETABLE GROWERS:—NITRATE OF SODA is beneficial to all vegetable crops when used in judicious quantities—Cabbages, Cauliflowers, Lettuces, Asparagus, Celery, Spinach, Onions, etc., etc., specially respond to it. It should be used, however, with caution on Leguminous Crops—Peas, Beans, etc.—only small quantities being applied if any is deemed advantageous to use.

SMALL APPLICATIONS at intervals are always more effective than one large dose.

DO NOT SPRINKLE ON FOLIAGE.—Soak your empty bags, and use the water.

Any difficulty in obtaining supplies or information required, apply—

Nitrate of Soda

G.P.O. BOX, 2037 L SYDNEY

The Royal Agricultural Society of Victoria

GRAND ANNUAL EXHIBITION

9 DAYS

19th to 28th September, 1929

Fruitgrowers!—This is the Show at which you should exhibit

Over £400

is offered in PRIZE MONEY, in addition to FOUR HANDSOME SHIELDS.
ENTRIES CLOSE Saturday, 17th August, AT NOON

Prize Schedules, Entry Forms, etc., on application to—

HENRY SCHWIEGER, Secretary

Temple Court, 422 Collins Street Melbourne.

SOIL ALKALI.

Experiences in Western Australia.

Soil alkali is a very serious problem. In an article in the "Journal of Agriculture, issued by the Department of Agriculture, Western Australia, Mr. L. J. H. Teakle, Plant Nutrition Officer, deals with the problems of soil alkali in Western Australia.

Mr. Teakle states that most types of reclamation practices are suitable only for very valuable land. In the Darling Ranges there are some places where a "salt patch" has been forming in a small valley, say, at the junction of two creeks. For a very small expenditure it should be possible to adequately drain these patches before the soil becomes badly affected.

Open drains cut about 2 or 3 feet

deep by means of a plough and small ditcher should be effective in the early stage. It would be necessary to drag a heavy log or ditcher down these drains occasionally, to keep them clean until it was practicable to put in tiles. Fertile patches, perhaps an acre or so in extent, might thus be saved for summer fodder, such as sorghum, maize, or Sudan grass.

Mr. A. J. Monger, at "Daliak," York, has made reclamation of some patches effected with alkali along a water-course through his property.

The result was achieved by the application of a heavy dressing of stable manure, and later, sheep manure, and then planting subterranean clover with an application of superphosphate at a rate of 1 cwt. per acre.

Whether this treatment will effect permanent improvement the test of time will tell. Excellent growth of pasture was obtained in the years immediately following the treatment.

The problem of crops for alkali soils is being dealt with in the appendix by Mr. C. A. Gardner. Suffice to say that Atriplex species may be useful in the Eastern Wheat Belt to provide a permanent pasture as a standby. In the areas receiving more liberal rainfall, couch grass, sorghum,

maize, Sudan grass, etc., may prove useful summer crops as the areas liable to alkali are kept moist by underground seepage for at least a considerable portion of the summer.

Indignation.

Conscientious Father (after chastising his son): "And now, my boy, tell me why I have punished you."

Little Son (indignantly): "That's it; first you pound the life out of me, and then you don't know what you've done it for!"

Clerk: "Look here, sir! I've been doing the work of three people for some time now, and I want a rise."

Employer (McPhairson): "I canna gie ye that, mon, but if ye'll let me hae the names of the other two, I'll sack 'em!"

AGENTS WANTED

To Influence Consignments of Apples by
 Reliable Firm

Write, Stating Terms, Etc., to—

HARTSTOKE, FRUITERS LTD.,

Brentford Market, Middlesex.

Code: A.B.C., Fifth Edition.

Cables: "Hartstoke," Brentford,
 Middlesex."

PATENTS
GEORGE A. UREN
 PATENT ATTORNEY

"HENRY HOUSE," 499 LITTLE COLLINS ST.
 MELBOURNE.

New Laid Eggs

becoming scarcer
and higher in price



It has always been so. First comes the moulting, then the winter, and, Hey Presto, egg prices are soaring. Why have any need to worry over the high prices other people are paying? Why twinge when placing your weekly order with the grocer? Have your own fowls supplying you with new-laid eggs by feeding with "Karswood" (which contains dried and ground insects). Think what it means! No more eggs to be bought. No more good food to be turned into fat instead of eggs. Read the testimonials below and note the difference that "Karswood" made.

Fowls laying well.

"I have been using your Karswood Poultry Spice for a period of twelve months with very good results. A few months ago I discontinued using the Karswood, and I noticed a big falling off in the eggs, so I bought a supply of Karswood again, and they are laying well again. I will recommend it to all my friends."

(Sgd.) J. A.

Original letter on file for inspection.

Much better results.

"I have used Karswood Poultry Spice for a great number of years, and I have always had splendid results from it. 'I find it pays to use it,' both for growing stock and matured birds. I have tested it out in many different ways, and in support of this I can tell you that from every experiment Karswood has always given much better results than any other competitive

article. I have averaged forty-three eggs from fifty layers for several months now. Karswood will not only prove a prolific mixture for pure breds, but will also do well with poorly bred fowls. I will advise all poultry keepers to use Karswood Poultry Spice."

(Sgd.) G. E. PEARSON,
Armidale, N.S.W.

Overwhelming evidence.

"I have been a constant user of Karswood Poultry Spice for the last two and a half years. Without a doubt it has given me wonderful and overwhelming evidence of its splendid qualities. If this letter is of any value to you, you are at liberty to use it at your own discretion."

(Sgd.) H. SHUTTLEWORTH,
39 Bayview Street, Tennyson.

Note the Economy.

- 1/- packet supplies 20 hens for 16 days.
- 2/- packet supplies 20 hens for 32 days.
- 13/- (7 lb. tin) supplies 140 hens for 32 days.

Supplies.

Karswood Poultry Spice is obtainable from all wholesalers and stores at the following standard retail prices:—

- ½-lb. packet, price, 1/-; 1-lb. packet, price, 2/-; 7-lb. tin, price, 13/-; 14-lb. tin, price, 25/-; 28-lb. tin, price, 48/-.

**KARSWOOD
POULTRY SPICE**

1 M.29

Increases Egg-production but does not force or injure Poultry



POULTRY.

There is just as much skill necessary in the poultry industry as any other specialised activity. The production of eggs is now so great that an export market is essential. Those desiring to commence in a small way should have pure bred stock.

The largest egg-producing farm in the Commonwealth is at Werribee (Vic.), where Messrs. Carter Bros. have 20,000 layers. Extensions are still being made. This farm commenced a few years ago with a hen and a clutch of chickens.

Mr. Rugg, Poultry Expert, Victorian Department of Agriculture, states he knows of other farms now carrying from 3 to 16,000 birds which began in a small way with a single breeding pen.

Buyers of eggs for hatching should insist that 2 oz. eggs be the minimum. Any egg weighing less than 2 ozs. should not be hatched. If poultry farmers insist on hatching from any and every egg, irrespective of size, they will flood the country with birds that will lay eggs unsuitable for either local or export trade.

Chickenpox was much in evidence this season. This disease usually attacks birds in the late summer and early autumn, when they have almost completed their laying season and are in a weak condition owing to the strain of the long season of egg-laying.

Judicious feeding is necessary and the administering of simple medicines. With the new year start giving the fowls mild doses of Epsom salts and sulphur. The amount of Epsom salts recommended by Mr. Rugg is 1 lb. to every 300 birds, say, every Monday, and 1½ lbs. of sulphur to every 300 birds, every Thursday. The doses to be continued from January to April. Succulent green stuff is good for feed, and some should always be fed after the grain food at night. Minced raw onions given twice a week at the rate of 5 lbs. to each 100 birds, are a splendid tonic.

The first indications of chicken pox are eruptions on the comb or wattles. As soon as an individual is attacked it is wise to treat the whole of the birds in the flock at once by increasing the dose of Epsom salts to 3 lbs. and the sulphur to 4½ lbs. The eruptions or warts should be painted with strong iodine. Houses must be kept clean and well sprayed with a good disinfectant such as Chloride of lime, Carbosyl or sheep dip. Plenty of good clean litter for the floors should be provided.

Moulting.

Moulting is a critical time for fowls; this process usually takes place every year, and at the time it makes a heavy demand on the system.

With a strong bird in its first or second year, the moulting period is usually six to eight weeks, in which time the old feathers are completely discarded and new ones grow in their place. With older and weaker birds, moulting often takes three months, the process dragging on until winter, and the birds do not commence laying again until the spring, thus losing several months, when eggs are scarce and high in price.

With healthy birds, all that is necessary is to give grain and green feed, warm, once a day.

BEEKEEPING.

Winter Work.

THE work in the apiary just now consists in an occasional examination among the bees to see that all is well. It is a mistake, however, to unnecessarily interfere with the bees. Sufficient stores should be on hand. If in doubt, it is better to estimate the quantity of stores by lifting the back of the hives.

Choose a fine day for this work, and in the operations that are to take place be careful that the clusters of bees are not broken. After opening the hives to supply any deficiency of stores, a comb, or more if necessary, of honey should be laid on the top of

"The Australasian Beekeeper"

The leading Bee Journal in the Southern Hemisphere.

A monthly magazine entirely devoted to beekeeping. Published in Australia for Australian Conditions. Subscription (5/- per year, prepaid, post free), may start now.

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the frames over the cluster. Close up the colony as soon as possible in order to conserve the heat. Mr. E. A. Earp, of the N.Z. Department of Agriculture, states that at this season of the year bees will not take syrup readily. If combs of honey are on hand and feeding is carried out, place the combs on the outside of the cluster. To place them in the centre of the cluster will be the means of dividing it, and this will result in much harm to the bees and perhaps bring about their death.

NEW ZEALAND HONEY PRODUCTION 6,700,000 POUNDS.

Honey production in New Zealand amounted to about 6,720,000 pounds, of which 2,464,000 pounds were exported, according to the Department of Commerce.

Principal market for New Zealand honey was the United Kingdom, but small shipments were made to Canada, China, Japan, and the Straits Settlements, Trade Commissioner Julian B. Foster, Wellington, reports.

It is estimated by the New Zealand Government expert on honey that there are 8,000 producers of honey in the Dominion, and that of this number 1,500 are raising bees for commercial purposes.

Practically all of New Zealand's honey production is of the extracted type. American honey extraction methods are followed by all New Zealand apiarists.

Floral sources for honey in New Zealand are the white clover, manuka tree, rata tree, birch, and pennyroyal, which produce, respectively, water white, dark, white, light amber, and dark red honeys.

Teacher (reading): "And Nero ordered his Centurion to give the man twenty stripes."

Son of Police Sergeant: "Lumme, miss! That must have made him a Brigadier-General."

The Fruit Trade

Market Reports and News Items

REPRESENTATIVE FIRMS, FRUIT MERCHANTS, AGENTS, EXPORTERS.
Advertising in this Journal.

NEW SOUTH WALES.

Sydney.

Chilton, F., City Fruit Markets.
Louey Pang & Samuel Wong Ltd.,
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VICTORIA.

Melbourne.

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Cave, F., & Co., Melbourne.
Davis, J., Western Market.
Dennys, Lascelles Ltd., Temple Court,
Melbourne.
Illis, A., & Sons, Western Markets.
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Place, Melbourne.
Munford, J. G., 449 Flinders Lane.
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Producers' Dist. Society, Western
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Ross, J. W., Western Market.
Silbert, Sharp & Davies, Western
Markets.
Stott & Son, T., Western Markets.
Tim Young & Co. Pty. Ltd., Western
Market.
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Woolf, G., Western Market.
Wholesale Fruit Merchants Assn., J.
D. Fraser, Temple Court, 428 Col-
lins St., Melbourne.

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Hobart.

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Peacock & Co., W. D., Fruit Exporters.
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Railway. Rep., Major H. S. Cole,
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Bridge St., Sydney.

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The Port of Manchester, rep. W. J.
Wade, 8 Bridge Street, Sydney.

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Bremen.

Fruchthandel, Gesellschaft.

Hamburg.

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Lutten, J. H., & Sohn, Hamburg.
Stier, Aug., Fruchthof, Reps. J. B.
Mills & Co., Bank House, Melbourne.
Timm & Gerstenkorn.

AUSTRALIAN FRUIT IN ENGLAND AND THE CONTINENT.

Ex the "Ormonde" and "Barrabool."

Tasmanian Apples sold as follow:—
Cleopatras, 9/6 to 11/- per case, some badly affected with black spot, 8/3 to 9/-; Adams, 9/- to 10/-; Scarlet Nonpareils, 10/- to 11/9; Alfristons, 12/- to 13/9; Cox's, 9/3 to 15/-; Blenheims, 10/6 to 12/-; Croweggs, 10/- to 10/9; Jonathans, 9/- to 12/-; Alexander's, 9/6; Wellington's, 11/6; New York's, 10/6 to 12/6 to 12/-; Alfriston's, 12/6; Cox's, 10/- to 15/-; Dunn's, 12/6 to 14/- West Australian Jonathans, 11/- to 14/- per case; Dunn's, 11/6 to 14/6; Adams, 11/-; Cleopatras, 11/- to 14/-; King David's, 11/-; Delicious, 12/- West Australian Pears, in cases, Comice, 24/- to 30/-; Winter Nelis, 18/-; Packham's, 17/- to 19/6; Clairegeau, 18/- to 20/-; in three-quarter cases, Josephines, 15/- to 19/-; in half-cases, Vicars, 6/6 to 7/-; in trays, Glou Morceau, 5/- to 6/-; Boscs, 7/- to 7/6; Winter Bartlett's, 6/- to 7/-; Winter Nelis, 6/- to 7/- Grapes, in three-quarter cases, Ohanez, 11/- to 12/6; Black Malagas, 8/- to 10/6; Red Prince, wasty, 4/6.

Ex the "Port Bowen."

West Australian Apples, quality and condition of which are good, have active demand. Jonathans are selling at 13/6 to 15/- per case; Dunn's 12/9 to 14/3; Cleopatras, 14/9 to 16/-; King David's, at 13/-, and Delicious at 14/-.

Ex the "Hororata."

New Zealand Apples: Cox's were somewhat wasty, but other descriptions were in fair condition. Jonathans, Wolsleys and Dunn's realised 12/- to 15/- per case; Ribstons, 11/- to 12/-; and Delicious, 14/- to 16/- Pears sold as under:—Packhams, 5/- to 6/-; Boscs, 6/- to 7/6; Comice were very wasty.

Ex the "Mongolia."

Apples ex the "Mongolia" were in variable condition, a few West Australian selling as follow:—Romes, 11/- to 18/-; Cleopatras, 12/- to 12/6;

Dunn's, 12/6. Tasmanian Apples are considerably wasty, and many have sold at very cheap rates. Cleopatra realised 10/- to 12/9; Duke of Clarence, 9/3 to 11/-; Cox, 5/- to 17/-; Ribston, 4/3 to 11/9; Jonathan, 7/9 to 12/-; Adams, 6/- to 10/6; Sturmer, 7/- to 12/-; Munro, 10/3 to 11/-; and Tasman's Pride, 9/- Tasmanian Pears were in a very bad condition, and were almost worthless, but Victorian and New South Wales fruit in the special chamber carried well. Victorian Bosc Pears, in cases, brought 24/-; Josephines, 20/- to 22/-; Clairegeau, 16/6. New South Wales Boses, in trays, 7/- to 8/-; Winter Nelis, 6/6 to 8/-; Winter Cole, 6/- to 7/6; and Anjou, 7/- to 8/-.

Ex the "Orford."

Tasmanian Apples realised:—Cox's, 12/6 to 15/6 per case; Cleopatras, 11/- to 13/6; French Crabs, 10/- to 14/-; Jonathans, 11/- to 13/3; Sturmer's, 12/- to 14/3; Scarlets, 12/- to 13/6; Spitz, 13/-.

Ex the "Largs Bay" and "Horatius."

West Australian fruit realised the following rates:—Cleopatras, 14/- to 17/-; Jonathans, 13/- to 15/-; King Davids, 13/- to 15/-; Delicious, 15/-; Dunn's, 14/- to 16/-; Newtowns, 12/6 to 16/- West Australian Pears:—Winter Nelis, 18/- to 21/-; Josephines, 20/- to 23/-; Winter Bartlett's, 15/- to 20/-; Vicars, 12/6 to 15/-; Keiffers, 1b/6 to 16/-; in three-quarter cases, Glou Morceau, 12/- to 16/-; in half-cases, Keiffers, 8/- to 9/-; Winter Nelis, 10/6 to 12/6; Josephines, 11/- to 16/-; in trays, Winter Nelis, 4/9 to 7/-; Josephines, 5/9 to 7/6.

Ex the "Pakeha's."

New Zealand Jonathans and Delicious brought 14/- to 16/-; Cox's, 18/- to 20/-.

HULL, LIVERPOOL & LONDON.

Mr. B. C. Criswick, of Sydney, acting representative of the London & North-Eastern Railway, has sent a list, showing comparative prices received for Apples at Hull, Liverpool and London. On May 16, ex "Port Bowen," W.A. Apples (Cleos.), in satisfactory condition, realised 14/- to 15/6; at Liverpool, ex "Nestor," 12/9 to 15/9. Tasmanian Apples, ex "Port Bowen," brought prices as follows:—Hull: Cox, 9/3 to 12/-, a few 14/9; Jon., 10/- to 12/3; Cleo., 10/3 to 13/-; Ribston, 8/6 to 10/-; Liverpool: Cox, 8/6 to 14/-; Jon., 9/- to 13/6; Sturmer, 10/- to 12/-; London: Cox, 11/- to 17/-; Jon., 8/- to 13/6; Cleo., 11/- to 14/-; Ribston, 11/- to 13/6; Sturmer, 10/- to 13/9. The report points out that the Tasmanian fruit at Hull and Liverpool was irregular in quality, Cox's pitted.

Mr. Criswick comments that if the poorer quality fruit secured such

prices, it was safe to assume that sound shipments to the outports would be worth a trial.

Hull.

Ex the "Port Bowen."

Tasmanian fruit realised:—Cleopatras, 12/6 to 13/-; Duke of Clarence, 10/6; Alfristons, 12/6 to 13/-; Worcesters, 9/9 to 11/9; Blenheims, 9/- to 9/6; Ribstons, 8/3 to 10/6; Cox's, 10/6 to 13/-; and some stained fruit. 7/6. West Australian Ohanez Grapes, in three-quarter cases, brought 12/6 each. West Australian Apples were in satisfactory condition. Cleopatras brought 14/- to 15/6; Dunn's and Jonathans, 13/- to 14/3. The Tasmanians were of poor quality, many, including Cox's, being considerably pitted. Jonathans brought 10/- to 12/3; Cleopatras, 10/3 to 13/-; Cox's, 9/3 to 12/-, a few 14/9; Ribstones, 8/6 to 10/-; others, 9/- to 10/-.

Liverpool.

Ex the "Nestor."

The West Australian Apples arrived in good condition. Cleopatras brought 12/9 to 15/9. Tasmanians were irregular, many being pitted, especially Cox's and Cleopatras. The demand was fair. Cox's brought 8/6 to 14/-; Sturmers, 10/- to 12/-; Tasman Pride, 10/6 to 12/6; Alfristons, 10/- to 14/-; Jonathans, 9/- to 13/6; others, 9/- to 11/9.

Hamburg.

Ex the "Port Dunedin."

West Australian Apples sold as follows:—Cleopatras, 9/- to 16/- per case; Dunn's, 11/- to 18/-; Jonathans, 9/- to 13/-; Adams, 7/- to 10/6; Cox's, 15/- to 18/-; Delicious, 9/3 to 11/6; Shoreland Queen's, 11/- to 12/-; Pears, in cases, two half-cases or three trays: Boscs, 14/- to 21/6; Clairgeau, 7/6 to 20/-; Josephine, 22/6 to 25/6; Winter Nelis, 13/- to 21/6; Vicars, 6/9 to 20/-; Comice, 7/9 to 18/-; Packham's, 16/- to 17/3; Beurre Diel, 14/- to 21/- . Brokers report that the Jonathan Apples were small, but of better color than the last shipment; Cleopatras and Dunn's were mostly very green and considerably affected with bitter pit. Pears were mostly of good quality, but were rather too ripe.

Ex the "Horatius."

West Australian Apples sold as follows:—Cleopatra, 11/- to 17/- per case; Dunn's, 12/- to 19/-; Jonathan, 8/- to 15/-; King David, 9/6 to 14/-; Delicious, 10/9 to 12/6; Rome Beauty, 8/- to 9/-.

Ex the "Orestes" and "Port Gisborne."

West Australian Pears, in cases: Glou Moreceau, 12/3 to 17/9; Winter Nelis, 15/9 to 20/9; Josephine, 13/9 to 20/9; Keiffers, 12/- to 15/-; Winter Cole, 13/- to 14/-; Comice, 18/9

to 20/9; Vicars, 14/- to 16/9. Tasmanian: Glou Moreceau, 14/- to 15/3; Vicars, 11/- to 15/-; Clairgeau, 14/3 to 22/6; Beurre Diel, 14/- to 19/6; Beurre Bosc, 14/- to 2b/6.

AUSTRALASIAN MARKETS.

New South Wales.

Sydney (17/5/29).

Mr. F. Chilton, City Fruit Markets, reports under date 17/5/29 as follows:—

Heavy quantities of Apples have arrived from Tasmania during the past couple of weeks, and prices have declined temporarily. Tasmanian shippers, please note that large-sized Jonathans are coming forward in an over-ripe and soft condition. Citrus fruit has made its appearance on the market, and prices will decline as supplies increase.

Queensland Fruits.—Bananas, 16/- to 28/- per case. Pines, smooth leaf, 11/- to 20/-. Tomatoes, 5/- to 12/- per half-case. Custard Apples, 5/- to 7/-. New South Wales Fruits.—Bananas, Tweed River, 16/- to 28/- per case. Lemons, 7/- to 10/- per bus. case. Oranges, main crop, 7/- to 11/-; navels, 9/- to 13/-. Mandarins, Emperor, 9/- to 14/-. Apples, Granny Smith, 10/- to 17/-. Pears, Packham, 12/- to 15/-; W. Cole, 8/- to 15/-. Cucumbers, 4/- to 8/- per half-case. Passions, 8/- to 16/-. Grapes, P. Cornichon, 8/- to 12/-; Ohanez, 9/- to 11/-. Tomatoes, 6/- to 14/-. Victorian Fruits.—Pears, Howell, 10/- to 13/- per bus. case; W.C., 10/- to 14/-; P.T., 10/- to 15/-. Tasmanian Fruits.—Apples, S.P.M., 9/- to 11/- per bus. case; Jonathan, 8/- to 12/-; French Crabs, 10/- to 12/-; Tas. Pride, 9/- to 11/-; Cleo., 9/- to 12/-; Pears, W. Cole, 5/- to 7/- per half-case; Giblin, 4/6 to 6/-; W.N., 4/- to 7/-.

Victoria.

Melbourne (22/5/29).

The following are the wholesale prices ruling at the Western Market. Some special lines brought higher prices, but considerable quantities were sold at lower prices, due to inferior quality, bad packing and grading:—Apples, good to choicest eating, 10/- to 14/- per case; cooking, 9/- to 11/-; specials, higher. Green Bananas, Queensland, special, 27/- to 28/-; choice, 24/- to 26/-; standard, 19/- to 23/-; plain, 14/- to 18/- per double case. Grapes, 7/- to 14/-. Lemons, 7/- to 12/-. Mandarins, Victorian, 15/- to 18/- a few higher; Queensland, 16/- to 20/-. Common Oranges, 8/- to 13/-; navel Oranges, 11/- to 16/-. Passion Fruit, 12/- to 18/-. Pineapples, Queen's, 16/- to 24/- per double case.

The Victorian Central Citrus Association reports sales as follow:—Stan-

dard navels, average Victorian and Murrumbidgee, 74's-126's, 11/- to 15/-; 175's, 14/-; central packs and selected lines, 1/- to 3/- higher, specials higher. Mandarins, 16/- to 20/-. Grape Fruit, a few, 20/-. Common Oranges, Queensland, 12/- to 13/-. Lemons, medium standard, 11/- to 13/-; large and small, from 8/-.

Queensland.

Brisbane (18/5/29).

Bananas, Cavendish, 1d. to 11d. per dozen; Lady Fingers, 1 1/2d. to 9 1/2d.; sugars, 2 1/2d. to 5 1/2d. Apples: Tasmanian Apples: Jon., 13/- to 15/- per case; S.P.M., 13/- to 14/6; F.C., 14/- to 15/-; N.Y.P., 13/- to 14/-; S.T.P., 12/- to 13/6; T.P., 13/- to 14/- per case. The Pear market was steady, and for Tasmanian Pears the following prices ruled:—W.C., 15/- to 16/- per case; G.S., 14/- to 16/-; E.B., 9/- to 11/-; Jos., 14/- to 16/-; B.B., 14/- to 16/-; Keiffers, 9/- to 12/- per case. Other fruits:—Oranges, 9/- to 12/- per case. Mandarins, Scarlets, 10/- to 14/-; Emperor, 10/- to 15/-; Glens, 11/- to 16/-; Fentals, 9/- to 11/- per case; navels, 10/- to 14/-. Lemons, colored 7/-, green from 2/- to 4/-. Pineapples, smooth from 10/- to 14/-; Ripleys, 9/- to 10/-. Grape Fruit, 4/- per half-case. Passion Fruit, 3/- to 6/- per case. Papaws, colored, 6/- to 7/6, green 3/- to 4/-. Custard Apples, 2/6 to 3/6 per case. Strawberries, 24/- to 30/- per dozen boxes.

South Australia.

Adelaide (18/5/29).

Fruit.—Apples, eating, 15/- to 16/- per case; cooking, 12/- to 13/-. Bananas, Queensland, 30/- to 32/-. Grapes, dark, 8/-; white, 8/-. Lemons, 7/- to 9/-. Melons, pie, 4/- per cwt. Nuts, Almonds, 9d. to 1/- per dozen lb.; Brazil nuts, 12/-; Cocoanuts, 6/-; Peanuts, 11/6; Walnuts, 12/-; Barcelona nuts, 12/-. Oranges, common, 10/-; Mandarin, 17/- to 18/-; navel, 12/- to 14/-. Passion Fruit, 26/-. Pears, eating, 10/-; cooking, 6/- to 7/-. Pineapples, 25/-. Quinces, 6/-.

New Zealand.

Dunedin (16/5/29).

Messrs. Reilly's Central Produce Mart report as follows:—

Apples: Choice Cox's, 14/- to 15/-; Delicious, 7/6 to 10/6; Jonathans, 7/- to 8/-; Sturmers, 8/- to 9/-; others, 4/- to 8/-; cooking, 4/- to 7/-. Desert Pears: Winter Coles, 6/-; inferior, 2/- to 4/-; Winter Nelis, 8/-. Passions, 9/6 to 11/-. Navel Oranges, 36/-; Valencia, 35/-. Lemons, Missions, 44/-; Grape Fruit, 36/-; Grapes, 1/3 to 1/10; Gros Colmars, 2/4 to 2/8 1/2; Australian, 25/-. Bananas, Samoan, 21/- to 25/-. Cocoanuts, 18/- per sack. Quinces, 1 1/2d. to 2 1/2d. Blackberries, 7d. to 9d.

PORT OF MANCHESTER

Extracts from Official Market Reports

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PROVE Prices realised for Imported Fruit AT MANCHESTER Challenge Comparison

With results obtainable at any other market, as the following examples indicate:—

	Hull.		Liverpool.		London.		Manchester.	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
	quality.		quality.		quality.		quality.	
18/1/29. Oregon Newtowns (case) ..	15/6	13/6	15/-	13/-	13/6	11/-	17/-	14/-
American Greenings (barrel) ..	35/-	30/-	31/-	26/-	35/-	30/-	36/-	30/-
25/1/29. Oregon Newtowns (case) ..	15/6	13/6	13/6	11/6	14/-	11/-	16/-	14/-
York Imperials (barrel) ..	36/-	29/-	28/-	22/-	30/-	24/-	36/-	34/-
Baldwins (barrel) ..	30/-	26/-	25/6	23/6	30/-	20/-	32/-	28/-
Russets (barrel) ..	34/-	28/-	31/6	28/-	30/-	25/-	35/-	33/-

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SYDNEY, N.S.W.

At a meeting held at Pakenham rules for the Gippsland Fruit Marketing Association were adopted. The registered office of the Association is at Bunyip. The first directors are Messrs. James Ahern (of Pakenham, Chairman), J. W. Bailey (Narre Warren), R. H. Bunt (Officer), W. H. Carne (Pakenham Upper), E. Harris (Beaconsfield Upper), F. Kennedy (Pakenham), and R. Nash (Bunyip).

Murrabit, Vic.—Growers are interested in the successful experiments recently carried out in U.S.A. by means of which Orange thrip is controlled. The opinion here is that thrips do a great deal of damage.

Knowing that thrips have caused very severe losses in Apple-growing and Strawberry districts, the suggestion is for this subject to be studied intensively by an approved scientist. The assistance of the Department of Agriculture and Council for Scientific Research would be welcomed.

Tests with Aboleum White Oil for the control of red scale have been successful. It is believed that the use of white oil will make fumigation unnecessary. Tests are being continued with orchard heating to prevent frost injury. Tests are being continued with briquettes and wood. The question of cost, of course, neces-

sarily enters. It is thought by many that briquettes will prove too expensive.

"FRUIT WORLD ANNUAL" APPRECIATED.

Cordial appreciation of the "Fruit World Annual" was expressed at the quarterly meeting of the Fruitgrowers' Cool Stores' Association of Victoria.

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CITRUS RED SPIDER IN CALIFORNIA.

Citrus Red Spider infestations are variable. In some sections considerable damage is done every four or all control measures the new type oil sprays without question give the greatest kill. There are seasons, however, when the use of this material is unsafe. During these seasons lime sulphur or lime sulphur dusting must be resorted to.

Oil sprays are used during the autumn and early winter. During the late winter and early spring a two to 2½ per cent. of liquid lime sulphur solution will give satisfactory results without such risk of damage as when oil sprays are used at that time.

In spring and early summer sulphur dusting will give control sufficient to last through the peak of infestation.

Dusting is only satisfactory when the weather is warm enough to ensure rapid volatilisation.

In late summer and early autumn two or more dustings may be used at cost considerably less than the oil spray.

Irrigated Soils.

Lessened Productivity.

AUSTRALIA is not unique in her problems of irrigated soils. The report of the U.S.A. Secretary for Agriculture on this subject will be read with interest. The report is as follows:—

In many sections land brought into cultivation by irrigation has become unproductive after a few years. Large investments of capital and labor are required to provide irrigation water and to develop irrigated land. It is therefore essential that such land should be highly and continuously productive. Some irrigated lands are highly productive and others are not. If knowledge as to the reason for these differences is not available, it is obvious that the development of irrigated lands must continue to be a speculative enterprise. Here, perhaps, is the principal reason for the fact that credit for operations on irrigated land is relatively costly.

Agronomic work has been conducted by the bureau at field stations with

a view to determining the factors responsible for the productivity of irrigated lands. This work has yielded important practical results. It has shown that the chief hazards in irrigation farming, aside from those common to ordinary farming, may be grouped into three classes:—

The accumulation in the subsoil of excessive quantities of water.

The accumulation in the soil of the root zone of excessive quantities of soluble salts, and

Changes in the physical condition of the soil by which it becomes impermeable to the movement of water and consequently unproductive.

These three difficulties may occur together, but any one of them occurring alone eventually may cause disaster. Understanding of the nature and causes of these difficulties makes it possible to anticipate injury before it becomes serious.

Two Sources of Injury.

Our investigators have found that the accumulation of soluble salts in the surplus zone, or root zone, to the point of injury to crop plants may come about in either of two ways.

Where the subsoil is saturated with moisture so that the surplus soil is kept moist from below, continued evaporation results in concentrating the soil solution past the limit of tolerance of crop plants.

A similar condition may result where the subsoil is not saturated. When irrigation water is used so sparingly that all the water applied is held within the root zone, to be absorbed by plants or lost by evaporation, the salts carried in solution in the irrigation water remain in the root zone, and in time make the soil solution too concentrated.

Changes in the physical condition of the soil, in the direction of permeability, result from reactions that take place between the soil and the salts in the soil solution. When the salts in the soil solution are chiefly salts of sodium, the reaction with the soil is in the direction of replacing calcium from combination with the soil. The sodium passes into soil combination and the replaced calcium passes into solution, and accordingly may be more or less rapidly leached.

Soil containing appreciable quantities of combined sodium, as a result of such replacement reactions, become dispersed and gelatinous when wet, do not absorb water readily, and become hard or "bake" upon drying.

As for the other principal cause of difficulty (the accumulation of injurious quantities of subsoil water) it has been found that this is often due to percolation losses from canals and ditches. It was formerly attributed chiefly to the excessive use of irrigation water by farmers.

In any particular case the first need is to decide what is the chief source of the water causing the

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The Hydro Vacuum Fumigation Co. Ltd., officially registered as a Quarantine Station by the Plant Quarantine Department. Works: Ingles-street, Port Melbourne. Office: Temple Court, Collins Street, Melbourne, C.I. Phone: Central 2670.

trouble. A correct diagnosis may point to preventive measures less expensive and more effective than drain-

age.

Loss of productivity in irrigated soils is a difficulty better dealt with

by prevention than by cure. Recent research work by this department throws a flood of light on how pre-

South Australian Department of Agriculture.

(Continued from page 236.)

South-Eastern Districts—H. H. Orchard, Mt. Gambier.

Adelaide Plains District—J. Hunter, Adelaide.

Mid-Murray District—H. Beriman, Waikerie.

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The activities of the branch embrace control of imported and exported plants, fruits, seeds, etc., under State and Commonwealth laws; the instruction of horticulturists, and the enforcement of laws relating to the suppression of pests in orchards and gardens; the testing by means of experiments of various practices followed in fruitgrowing under irrigated and non-irrigated areas; the testing of varieties of fruits of all kinds; the enforcement of State laws dealing with fertilisers, fodder (hay and chaff), fruit cases, insecticides and fungicides, rough handling of fruit, and grading of potatoes and onions is dealt with by officers of the branch.

The plant pathological work is done for the branch by Mr. G. Samuel, B.Sc., Plant Pathologist at the Waite Agricultural Research Institute, near Adelaide, and Dr. Davidson, who has recently arrived from Rothamstead, England, will take up entomological work on similar lines. Hitherto the branch has received much assistance from Mr. A. M. Lea, entomologist to the South Australian museum.

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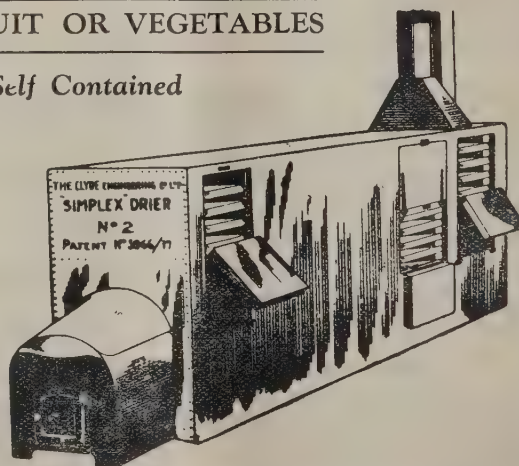
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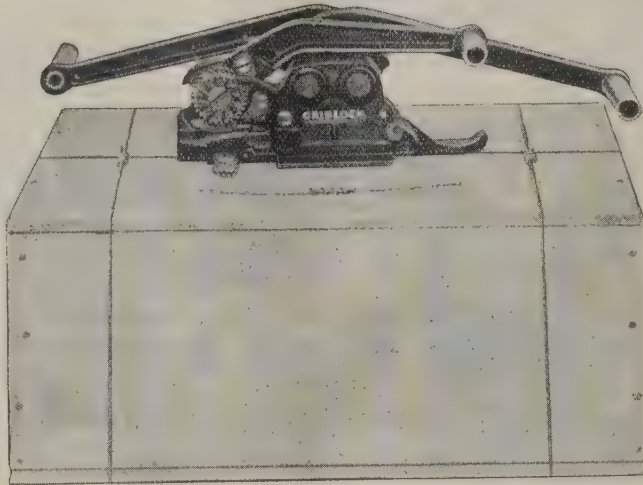
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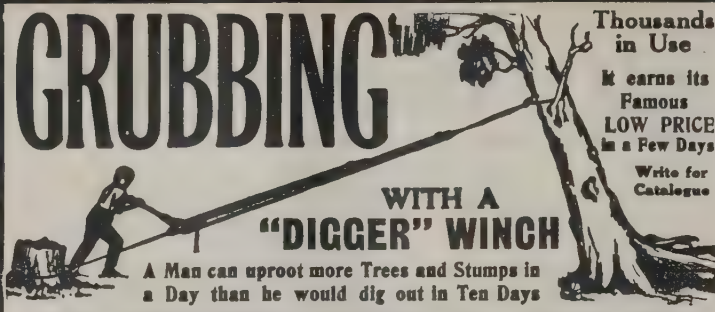
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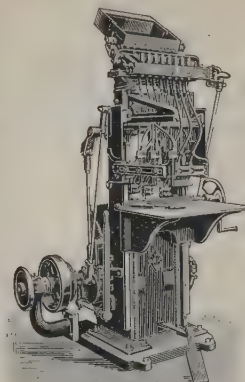
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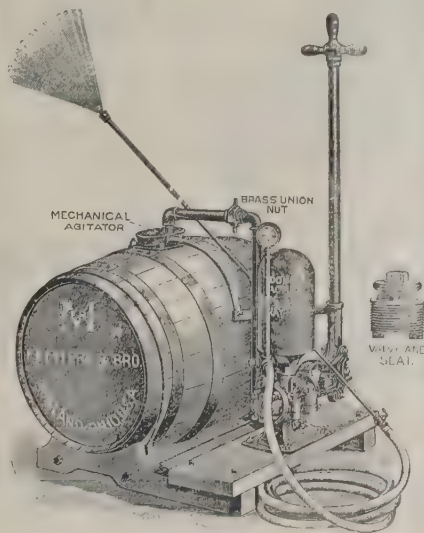


Fig. 502.—Barrel Pump.

A powerful Hand Pump with large air chamber. Can be mounted on end or side of barrel. Fitted with patent combination Suction and Discharge Ball Valves. By slackening one set-screw, both valves are exposed. 2in. Brass Plunger, 4in. Stroke. Twin Paddle Agitator.

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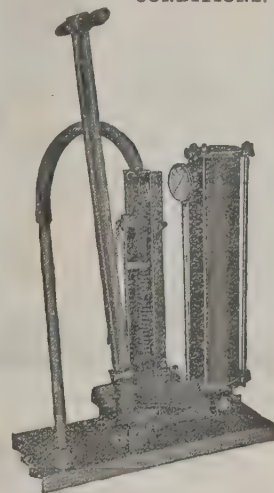


Fig. 513.—Spray and Jetting Pump.

A most powerful Hand Pump for orchard work, and also suitable for applying Whitewash, Kalsomine, and Water Paint. The large air chamber ensures even pressure. Fitted with 1in. Bronze Ball Valves with reversible and interchangeable seats. Compensating Spring takes one-third of the load. Cylinder 2 1/2 in. dia. Forcelain lined. Mounted on plank, and complete with Pressure Gauge, Suction Hose and Strainer and Hose Nipple. Price, £19. Delivery hose and fittings extra.

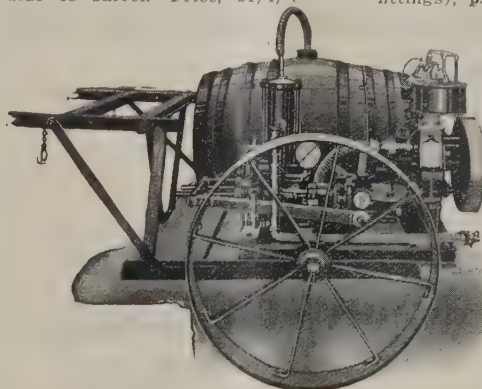
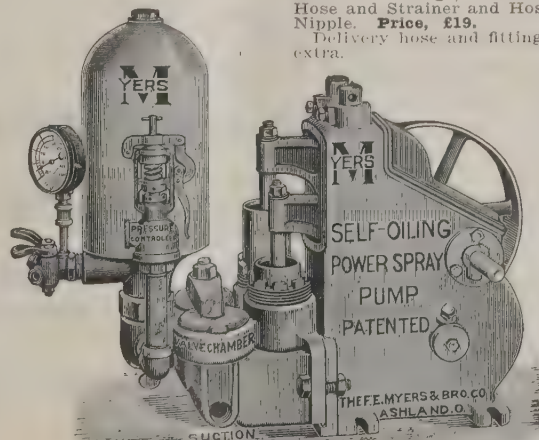


Fig. 602.—Portable Power Sprayer,

Consisting of Air-cooler Engine and Double-acting Pump with heavy Brass-lined Cylinder, 2in. dia. x 5in. stroke, Delta Metal Piston Rod, Phosphor Bronze Ball Valves with reversible seats, extra large air chamber, Pressure Gauge, Relief Valve, Suction Hose and Strainer. Engine and Pump fitted on channel steel base, and mounted on Two-wheel Transport, with shafts complete. Barrel 60-gallon capacity. Rotary Agitator. Pressure 240lbs. Price (without hose or fittings), £90.

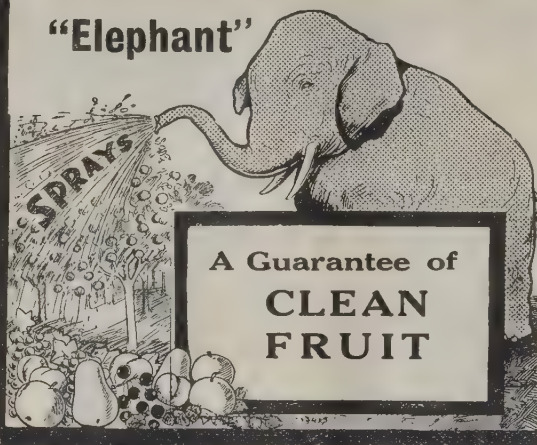
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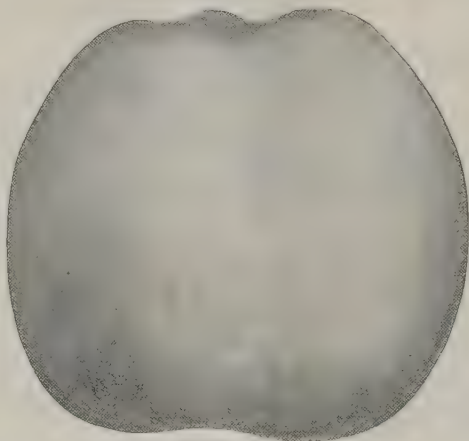
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tion. Articles on spraying, pruning,
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U.S.A. CROP REPORT.

Frost Damage in California.

An interesting fruit crop survey is
to hand from the California Crop Re-
porting Service, Department of Ag-
riculture, as follows:—

Apples.—Prospects fair; consider-
able frost damage.

Peaches.—Short crop, owing to
frost damage; clings 36 per cent. of
normal, as compared with 87 per cent.
this time last year. In 1928 the
cling Peach production was 414,000
tons, of which 70,000 tons were not
utilised. In freestones, the crop
shows 55 per cent. of normal; last
year the production was 204,000 tons.

Apricots.—Crop is expected to be
the same as in 1928 (i.e., 57 per cent.
of normal); frost injury.

Pears.—Conflicting reports: general
impression suggests 64 per cent. of
normal as compared with 86 per cent.
last year.

Grapes.—Nothing definite. A
smaller crop than last year is ex-
pected, owing to frost. Preliminary
reports show that Thompson's Seed-
less suffered most, table varieties
second, and wine varieties third.

Prunes.—Considerable frost da-
mage; crop will probably be 50 per
cent. of normal, compared with 70
per cent. last season.

Vegetative Propagation for Root Stocks

Important Investigations in England.

Valued Research at East Malling Experiment Station.

(By R. G. Hatton, M.A., Director East Malling Experiment Station, Kent, England.)

Preface.

This paper has been prepared, at the request of the Empire Marketing Board, by the Director of the East Malling Fruit Research Station, following on a conference of scientific workers interested in this subject.

A substantial grant is being made from the Empire Marketing Fund to the East Malling Station in order that its work may be extended and intensified. Its 14 years' study of the problem of root-stocks has strikingly affected the culture of fruit in Great Britain, and this summary of its results may be of use to those who are studying like problems overseas. From time to time the Board considers, it may be serviceable to bring to the special attention of the Governments of the Empire problems which have been recommended to it as of prior importance by scientists working in one part of the Empire or another.

Mr. Hatton's paper speaks for itself. Every scientist has recognised the fundamental importance of serious uniform and reliable material for experimentation in methods of culture and conditions of storage and transport, and for research into the problems of resistance to disease. Every grower of fruit trees will recognise the immense value of securing for his orchard at the outset, young trees which can be counted upon to grow up uniformly true to specification.

The aggregate value of the imports of fruit into the United Kingdom during 1925 was nearly £49,000,000—more than three times the average annual value for the 5 years ending 1913. At present less than one-quarter of these imports come from Empire sources. But the opening of increased Empire production thus disclosed, and the possibilities of close settlement which fruit growing afford, point to a steady future growth in the Empire's fruit production. It is of the first importance that every aid to economic production that science can discover should be explored to the full and placed at the ready disposal of those whose livelihood depends upon the growing of fruit.

The problem of standardising horticultural material and of securing uniform root-stocks affects many other fruits than those to which the work at East Malling has been applied; and the present paper is circulated in the hope that it may afford a short summary, useful to those who have similar problems to meet, and that it may elicit from scientific workers in different parts of the Empire information which will enlarge the common stock of Empire knowledge on the subject.

WALTER ELLIOT,

Chairman of the Research Grants Committee.
Empire Marketing Board, May, 1927.

Introductory.

THE establishment, by introduction, breeding or selection, of varieties adapted to local conditions of soil, climate and general environments, is the first essential task of every horticultural community.

Its second care should be the maintenance and development of those varieties along the best and most profitable lines.

The chosen varieties, generally of complex parentage, must be rapidly multiplied for commercial distribution.

Since the horticulturist is fully alive to the impossibility (in the vast majority of cases) of reproducing his trees and bushes true to type from seed, owing to the great variability of seedlings, he has resorted to different methods of vegetative propagation. This involves the separation from the parent plant of some portion, which is then re-established as a new individual.

Methods of Vegetative Propagation.

Not only may the particular method used differ with every species of plant, but, in addition, it may have to be adapted to the requirements of individual varieties, and to each set of soil and climatic conditions.

Some fruits, such as the Strawberry and Raspberry, and even some of the tree fruits which can be grown upon their own roots, are multiplied most simply by the severance of natural runners and suckers. Others, such as the Currant, vine and Quince, are generally raised by some form or other of stem cutting, whilst some Raspberries and tree fruits can be readily reproduced by root cuttings. Again, other varieties of fruit, such as the Gooseberry and some varieties of Apple and Plum, respond readily to forms of layering. In this method young stems are covered with soil before being severed from the parent plant and, as a result, they produce new root systems and can then be established as separate individuals.

Finally, the great majority of the tree fruits, for example, the Apple, Pear, Plum, Cherry and Orange and other citrus fruits, and, in some countries, the vine, are reproduced by means of budding and grafting. This method is now being applied also to other economic plants such as rubber. A single bud, or a shoot bearing several buds (the scion), of the desired variety is incorporated with an early developed root system of some other variety—the root-stock.

Need of More Knowledge on the Subject.

Most of these methods of propagation have been practised in Europe from time immemorial, and consequently a considerable literature and tradition has grown up around them.

In spite of this, as the authors of that very comprehensive review of present knowledge of fruit growing, "Fundamentals of Fruit Production," point out, whilst "the universality of variation in plants when propagated sexually is well known," and consequently vegetative methods of reproduction have been commonly resorted to, scientific investigation has devoted little attention so far to the problems involved in the process of selecting cuttings, scions, and root-stocks.

In other words, in their haste to speed up the process of fruit production, horticulturists have largely neglected that second essential stage in the consolidation of their industry, the standardisation of the actual material used. They accepted the traditional methods of its multiplication without studying their application in detail, and they were too prone to generalise from the particular, to assume that the treatment adapted to one species or variety, or set of conditions, must necessarily also be suited to others. The result has been the demand for large quantities of material which must be cheap, suitability being often a secondary condition.

The nurseryman has naturally hastened to supply the grower with this cheap material which he demanded.

Marked Variability in Material so Raised.

It has gradually become evident that much of this material, though vegetatively raised, has proved extremely variable in its behaviour. Not only might one batch of trees, bushes or canes of a single variety behave very differently from a second batch grown under similar conditions, but the individuals within a batch often varied strikingly from one another. Whilst some exceeded expectations in growth or cropping, others fell far below the average; yet the grower could never be sure that he could repeat plantings of the most profitable trees or eliminate the undesirable.

Whilst it was obvious that some of these uneven results could be accounted for by soil variation and other accidental causes, it was often also obvious that this variation was inherent in the material itself. The question at once arose as to the causes of such variation, and the possibility of a more efficient control of material.

Investigation into its Causes.

The problem involves investigation along two distinct lines:—

- (a) The individuality of those plants raised from some form of cutting or layer, and subsequently growing upon their own root systems.
- (2) The individuality of those composite trees, each of which consist of a scion (bud or graft) from the original parent, and an extraneous root system (the stock) initially developed as a separate entity.

Irregular Performance of Plants Grown on Their Own Roots.

Investigations under heading (a) are of a fairly simple nature. They involve a period of identification, description and recognition, to ensure that the plants are true to name and variety. They must follow a period of strict testing of the capabilities of these apparently true plants by recognised methods of field experiment and statistical analysis.

Finally, if indications of the existence of superior plants are sufficiently insistent, a period of selection and development of desirable strains and varieties is necessary.

Work upon such lines in England has already emphasised certain causes of individual variation in plants so raised.

Nomenclature and impure Lines.

A very frequent source of trouble is the fact that varieties of plants have not been maintained pure, individuals of other varieties having been allowed to creep in. In some cases these extraneous individuals comprise the greater part of the sample. Sometimes this is due merely to ignorance and carelessness, but there are indications that it is also due, in some cases, to the development of "rogue" plants, often vegetatively vigorous and partially sterile.

"Rogues" and Bud Variation.

Sometimes these "rogues" have been due to a definite bud variation or "sport," sometimes to the unavoidable dropping of seed. In many cases the origin of the worthless "rogue," which may crowd out the desired variety, remains obscure, though it is suggestive to note that the same "rogue" appears over and over again associated with the same varieties.

Strains from Different Sources.

It has further been brought to light that particular strains of the same varieties received from different sources may be, at least for a period, much more profitable than others. Thus, in the case of Raspberries, three varieties obtained from a single farm have all consistently cropped better than any other strains of the same varieties, sometimes to the extent of over half a ton per acre. Whilst this is sometimes obviously due to the comparative freedom of certain strains from disease,

the cause is not always so clear, and may reside in the influence of different soil and climatic conditions. There may also be differences caused by the method of vegetative propagation employed.

Incidence of Disease.

Finally, many strains of varieties which continue to circulate in commerce have become almost worthless through the ravages of diseases or pests. Here again, by careful methods of hygiene, "roguing," and selection, it has proved possible to re-establish clean strains of valuable varieties which would otherwise prove unproductive.

The weight of evidence in favor of pursuing such lines in this country is now sufficiently strong, in the case of Currants, Raspberries and Strawberries, to suggest that they may have a very wide application to plants not yet so closely observed. The same principles as are involved in "trap nesting" and milk recording would appear, at least in part, to be applicable to horticulture as well.

Irregular Performance of Budded and Grafted Trees.

The investigations under heading (b), though far more complex, involving as they do the individual and part played both by the scion and the root-stock, separately and united, have, in a comparatively short period of time, yielded even more striking results, especially with regard to the influence of the root stock, which it is here particularly desired to express.

The Scion and its Selection.

With regard to the selection and influence of the individual scion, it must here suffice to say that, in the deciduous fruits, although there are probably slight bud mutations not infrequently taking place, and occasionally obvious ones occurring, no such good case has yet been established for the detailed selection of buds or grafts as seem to have been proved in the case of the citrus fruits. At the same time the claims of the "pedigreed" tree require further investigation now that they can be tested on standardised root-stocks.

The Influence of the Scion.

With regard to the comparative influence of particular varieties of scion upon any variety of root-stock, it has been found that, although such an influence does exist, it appears to be quantitative rather than qualitative, and at any rate quite subsidiary to the much more potent reciprocal influence of the root-stock upon the scion.

It has also become apparent that certain scions exhibit peculiar partialities or antipathies for certain stocks and combinations, frequently in a manner contrary to expectation.

Root-stocks, their Origin and Propagation.

The root-stocks in common use in Europe for the deciduous fruits may, at the outset, be placed in two main groups:—

- (1) Those raised from the seed, usually of wildings or of vintage varieties.
- (2) Those raised by one or other of the vegetative methods already described.

Seedlings.

Until recently the seedling group was regarded as the only source of supply for the so-called Crab or "Free" growing stocks for Apples, for the "Free" Pear stocks, for the "Mazzard" (*Prunus avium*) and Mahaleb stocks for Cherries, for "Common" Peach and Almond stocks, and for the so-called St. Julien, Black Damas and Myrobolan (*P. cerasifera*) stocks used for Plums. Seedlings stocks are also in regular use for citrus fruits, and such trees as Walnut and rubber.

Their Limitations.

Despite all assertions to the contrary, overwhelming evidence has been produced to prove that these named groups of Seedlings exhibit immense variation.

Though in some cases, such as the Seedling Myrobalans, all the individuals undoubtedly belong to a single species, in others, such as the St. Juliens, even the remotest family resemblance has disappeared, and in the case of "Free" Pear stocks, plants botanically resembling several species can readily be picked out.

These variations are not merely those of minute botanical characteristics; they include wide differences in the type of roots and in the suitability of the stem for receiving and "mothering" the buds of the scion. Further, it has now been amply demonstrated that much of the variability in growth, cropping, "anchorage," and even disease resistance, which is noticeable in our orchards and plantations, can definitely be attributed to the diverse character of these seedling root systems.

Effect Upon Uniformity.

To quote an actual case: Sixteen trees of Early Victoria Apple, budded upon seedling "Crab" stocks, although they were selected from the nursery as showing uniformity of growth as one-year-olds, have exhibited double the amount of variation in growth compared with an adjacently planted similar series of trees on vegetatively raised stocks. The variability of these trees in actual cropping performance is even more amazing when their 13-year record is examined. Translated to an acreage basis, this means that the grower of a mixed lot of trees such as these 16 Early Victoria on Crab, would, at the end of 13 years from planting, have harvested about 28 tons of fruit per acre. If he had known how to standardise his trees, so as to bring the average up to that of the best four, he would have harvested over 51 tons per acre. Conversely, if his trees had all turned out to average no better than the worst four, he would have had less than 10 tons per acre.

It has been proved that the elimination of the poor trees and the consequent raising of the standard of performance, can be accomplished through root-stock selection.

Instances such as those quoted above have been of common occurrence in commercial plantations in England, yet they are now largely unnecessary.

From the experimenter's point of view this variability is equally disastrous. For instance, it was found that if it were desired to detect a significant difference of 10 per cent. in the incidence of "leaf scorch" the number of trees necessary to give a reliable result would be 15 if the trees were worked on a known layered stock, and 420 if on Seedling Crab. The elimination of such uncertainties and irregularities in the material used for experiments is of the utmost importance to the research worker.

Were it not for the very marked bias in favor of the use of seedling root-stocks, it would be unnecessary to emphasise their disadvantages further, but there are obviously reasons for the popularity of these seedlings.

Their Popularity.

They are, of course, much more cheaply raised than are those stocks which require layering. Some stocks do not lend themselves readily to vegetative propagation, and some soil and climate conditions do not encourage the traditional methods. Moreover, the fortunate grower who has first choice and makes a lucky selection of the best trees on seedling roots may well be pleased with the results. There is always a rough process of grading, automatically going on in the nursery, which helps to protect the grower, but from the tree raiser's point of view the wastage is much heavier than it need be if standardised stocks are more generally used.

Some Misconceptions.

Two further traditions, which do not appear to be founded on established fact, have enhanced the popularity of seedlings against "layers." It was claimed that all seedlings were deep-rooted, as compared with layers,

which were all shallow. Ample evidence has been brought forward to show that shallow-rooted seedlings are as common as deep-rooted ones, and that the progeny of a deep-rooted variety reproduced by vegetative means assumes the same deep-rooted character. Again, it has been charged against vegetatively-raised plants that they "wear out" owing to the method of reproduction, whereas the sexual method ensures vigor. Wrongly-applied methods of vegetative propagation are certainly likely to lead to a weakening of the particular race, but it still remains to be proved that vegetative propagation per se has a weakening effect, when root-stocks such as the Doucin Apple, which was in common use in Western Europe at least in the seventeenth and eighteenth centuries, still maintain their vigor and efficiency.

True Lines From Seed.

That the nurserymen themselves were coming to appreciate the situation is evidenced by the attempts made in Holland and elsewhere to raise root-stocks from the seed of particular varieties which appeared to breed more or less true, the Seedling Pieter Ban Huig Pear and Kroosjespruim Plum Stocks are examples. It is evident that certain lines of seedlings are less variable than others, or at least bear a considerable external family resemblance and the possibilities of raising sufficiently true lines from seed need fully investigating. On the other hand, such a characteristic as disease resistance—as in the case of the Northern Spy stock to woolly aphis—has been lost as soon as vegetative methods have been replaced by raising from seed. It scarcely needs emphasis that, in such a case as this, extreme care must be exercised in order to maintain a true line of root-stock.

In the past, considerable care has rightly been lavished upon the maintenance of true lines of scion. Increase of knowledge has led to a growing recognition of the important part played by the root-stock in the economy of the composite tree, and it is therefore manifestly nothing more than good husbandry to expend equal care in employing root-stocks of satisfactory history.

Vegetatively Raised Stocks Resorted to.

Generally speaking then, at the present time, if particular root-stock characteristics are to be perpetuated, resort must be had to vegetative propagation—as for instance, the Northern Spy stock in South Africa and Australia, and the so-called "Paradise" stocks of Europe.

Their Use in Europe.

Although in the industry, there existed, in the case of Apples and Pears, a knowledge that certain root-stocks gave dwarf and others vigorous trees, little precise information was available on the matter. In the case of Peaches, Plums and Cherries, root-stock influence had been almost completely ignored by the grower.

A close investigation of the whole position, which has included the "roguing," over a period of ten years, of large acreages of commercially grown stocks and the identification of numerous samples, showed that the root-stocks used in commerce, when they were not merely collections of chance and varying seedlings, were very generally badly intermixed, and that they names were often interchanged. Even of the original collections of vegetatively-raised "Paradise" Apple stocks supplied by nurserymen as true samples for experimental purposes, 36 per cent. were mixed and 66 per cent. wrongly named. Further, the proper use of the stocks were not fully understood even by many tree raisers themselves, whilst the grower had little guidance as to what material to ask for, and how to plant it. This lack of precise knowledge has entailed considerable economic loss, which is all the more serious owing to the length of the time the grower has to wait for his returns. The not infrequent

failure of buds and grafts to take, and the production of a high percentage unsaleable trees as a result of unsuspected "incompatibilities," have repeatedly caused the nurseryman trouble. The fruit grower, unaware of the potentialities of his stocks, has only too often made mistakes in the spacing of his orchards, and has suffered disappointment from delay and irregularity in crop returns, or from unthrifty trees.

With similar uncontrolled material at his disposal the horticultural investigator has again and again been baffled by the variability of his results.

Fourteen years' investigations upon the varieties of root-stocks used for Apples, Pears, Peaches, Plums and Cherries, and the subsequent selection, raising and testing of true lines, have been sufficient to reveal the importance of the whole problem, and to show that the study of the reciprocal efforts of stock and scion, and of the root-stick relationship, is the first essential step in the comprehension of the culture of tree fruits and other grafted trees, and all that goes to make up their productivity.

Results have already demonstrated that vegetative propagation is commercially applicable to a much wider range of material than was supposed till recently. There is every reason to suppose that it can be still further extended, even, perhaps, to tropical conditions.

Evidence of Influence of Layered Stocks.

In the case of each one of the tree fruits, considerable progress has already been made, and principles of first-class importance demonstrated by the use of empirical methods of field trial.

Upon Apples.

In the case of Apples, from amongst some 17 frequently intermixed and misnamed varieties of vegetatively-raised root-stocks used in commerce, it has been demonstrated after some years of identification, that it is already possible to give the fruit grower four different types of tree of any given variety, each one to suit a particular purpose. It is possible to predict with considerable exactitude, over a wide range of conditions of soil, variety, etc., the approximate size to which the trees will grow, the age at which they will come into cropping, and even other factors, such as its period of blossoming and its propensities to certain troubles such as leaf-scorch, poor root hold, and susceptibility to Woolly Aphis and other pests. Such factors as drought resistance, and the size and quality of the fruit itself, are also affected.

These results have been confirmed upon a series of different soils and with a large number of different varieties. Whilst the details require adjustment for each set of conditions, the fundamental principles remain unchanged.

Upon Pears.

In the case of Pears it has already been shown that the failure of some trees to grow and prosper, which has long puzzled growers, can often be attributed to the effect of some varieties of Quince stocks in commercial use. Again, certain Quince stocks induce earlier fruiting than others, and so afford much more desirable "filler" trees.

Even amongst the so-called "Free" Pear stocks it has been amply demonstrated that it is possible to select and propagate vegetatively a series of Pear root-stocks which will give a wide range of performance when grafted with a given variety. Other stocks for Pears, such as the possibly blight-resistant *Pyrus ussuriensis* and calleryana, are similarly being standardised and tested.

Upon Plums.

In the case of Plums, many of the problems of the tree raisers, such as the failures of bud and grafts, have been placed to the definite "incompatibility" of particular

stocks and scions. The subsequent unthriftiness of some trees and their tardiness to crop, on the other hand, or their characteristic robustness and productivity on the other, have definitely been proved to be manifestations of inter-relationship of stock and scion.

It has also been found possible, as in the case of Apples, to vary the period of blossoming and leafing by root-stock influence. The possibilities of such a control in relation to frost injury are obvious.

Upon Peaches.

In the case of Peaches, again, the problems of "incompatibility" have been carefully worked out. For this purpose, selections were made from samples of commercial root-stocks, and true lines of these raised by vegetative means. As a result it has been possible to show, for instance, that whilst one variety of the Seedling Black Damas stocks produces a magnificent tree, another produces only a poor specimen, whilst the buds die out upon a third after growing out for only a few weeks.

The influence of these stocks upon vigor and productivity of maturing trees is being followed up as in the case of other fruits, and there are already indications that Peaches grown upon different recognised commercial stocks behave very differently.

Upon Cherries.

In the case of Cherries it has also been possible to standardise and propagate vegetatively-raised root-stocks. Perhaps no work illustrates more clearly the immense advantage of this standardisation to the tree raiser and grower alike than do these Cherry stock investigations. A careful analysis of common commercial practice has shown that the desired standard tree is usually ready to leave the nursery after five years in situ, at which time, on a generous estimate, some 50 per cent. of the trees raised on Seedling Mazzard stocks are generally saleable. On the other hand tests have shown that at the end of four years some 94 per cent. of the trees on Standardised Mazzard stocks, vegetatively raised, has reached the same point of development.

Upon Citrus Fruits.

Evidence has already been published in citrus growing countries demonstrating that the same sort of results may be looked for.

The Application of the Results to the Industry.

The application of this work to the needs of economic and experimental fruit growing is obvious. It has been possible, in a little under 14 years, with very limited facilities to assist tree raiser, fruit grower and experimenter alike.

The advantage of standardising the "Build-up" of the tree may be summed up as follows:—The tree raiser can eliminate his losses due to incompatibility of stock and scion. He can produce a higher percentage of saleable trees, often in short time. He can offer material of known capabilities for growth and cropping.

The fruit grower, knowing these capabilities, can obtain the trees most suitable to his conditions and purposes, and thus plan his plantations with certainty. By excluding unprofitable trees, he can be assured of a much higher standard of attainment. Further, he can prune and manure his trees more intelligently, and keep them under closer control.

Once the grower appreciates the enhanced value of such material, and the tree raiser discovers how it enables him to reduce his losses, the supposed conflict between the interests of the two parties will disappear.

Finally, the investigator by using material of known potentialities, can avoid many apparently contradictory results. He can attain a higher degree of reliability without increasing the present size of his plots. It has been possible to elaborate a new technique for horticultural

tural experimentation on the basis of this more uniform material, and thus provide a preliminary measure of the experimental error likely to be encountered in the field. This points the way to the increase of reliability in field experiments, and should largely eliminate the objection that such trials only too often yield conflicting results. With this objection removed, there is every reason to hope that the multiplication of such experiments may proceed more rapidly than in the past, and with greater success.

These promising results have been obtained in a comparatively short space of time and almost entirely through empirical tests in the field. Yet there are here involved underlying principles, the elucidation of which would open up a whole new series of prospects. When the relationship of cause and effect has been more closely studied in the laboratory, as well as in the field, it should be possible to evolve far more precise methods for the selection and raising of horticultural material.

Summary.

1. Since the reproduction of fruit plants from seed is very generally impossible owing to the resulting variability of the progeny, vegetative methods of propagation have been resorted to.

2. Suitable methods of vegetative propagation are found to differ not only with different species, but with different varieties, and varying soil and climatic conditions.

3. Despite the use of these methods, considerable variation in performance of individuals of the same variety has persisted.

4. In the case of plants grown upon their own roots, this variability has been proved to be due to such causes as:—

(a) Mixed and misnamed strains.

(b) The occurrence of "sports" and "rogues" from seed.

(c) Diseased strains.

(d) Source and origin, involving methods of propagation employed and environmental conditions during raising.

5. The application of methods of selection and "trap nesting" are recommended as having proved successful for the re-establishment of more profitable lines.

6. In the case of plants grafted (or budded) upon a foreign root-stock, this variability has been shown to be largely due to the influence of the root upon the scion.

7. The diverse character of seedling root has been largely responsible for the variations in growth, yield, anchorage, and even disease resistance within a single variety.

8. This variability can be greatly reduced by applying methods of vegetative propagation far more generally in the raising of the root-stocks used.

9. These methods have been successfully applied to a range of selected root-stocks for Apples, Pears, Plums, Peaches and Cherries, and the principle is recommended for consideration in the case of other plants exhibiting similar variability.

10. The application of these principles has resulted in a much greater control of the tree for the grower, who can measure its potentialities far more accurately. It also means a larger and often a quicker output of saleable trees for the tree raiser.

11. The advantages of standardising the fruit grower's material by guaranteeing the desirable "build-up" of his trees are of great economic importance.

12. Unprofitable trees and bushes can to a great extent be eliminated and a much higher standard of attainment assured.

13. Experimenters can be assured of much more uniform material, and thus can attain greater reliability of and confidence in their results.

Fighting Insect Pests in the Orchard

Codlin Moth.

Examine Apple and other trees carefully and remove old bandages and burn same, as these are hiding places for the grubs and chrysalids of these moths. Remove all loose bark and destroy this also by burning. Sometimes the larva and chrysalids are in the cracks of trees, examine these and remove any insects noticed therein.

Lichens on Fruit Trees.

Fruit trees in wet mountainous districts are often attacked by lichens. Spray with lime sulphur after pruning.

Red Spider and Bryobia Mite.

After pruning, Apple and other trees should be thoroughly sprayed with lime sulphur or red oil to destroy the eggs.

Scale Insects—Red Scale, San Jose, Apple Mussel and Olive Scales.

Spray with red oil, 1 gallon to 20 of water. Burn all prunings.

Peach Aphids—Green and Black.

After pruning it would be advisable to spray the trees with lime sulphur, or any of the spraying oils

or kerosene emulsion to destroy the eggs of these insects.

Painted Apple Moth.

The egg clusters of these very destructive moths are still to be found on fruit trees. They are easily destroyed by the red oil sprays or the light oil sprays. If young are hatched, spray with arsenate of lead.

Cherry Aphids.

After pruning, spray with lime sulphur or any of the spraying oils to destroy the bead-like eggs of these destructive insects. Burn all prunings.

Woolly Aphis (Winter Spray).

Nicotine sulphate 1 pint, red oil 1 gallon.

To prepare sufficient mixture to treat 100 trees, 1 lb. soap should be boiled in a gallon of water till dissolved; add 1 gallon red oil and mix thoroughly; then add 1 pint of nicotine sulphate, and after mixing the whole for a few minutes, add 80 gallons of water. If the water is hard, a small piece of washing soda should be added.

ADVERTISING CUSTARD APPLES.

We recently noticed that retail fruit shops in Melbourne and suburbs had some neat advertising designs: "A Tropical Treat; Try Custard Apples," and similar designs, to attract the public.

The green appearance of the Custard Apple is not attractive, but once people learn to try them—well, they come again.

Carry on the good work, Queensland!

CHILI STUDIES AMERICAN METHODS.

Mr. Luis Bastidos and Mr. Salatiel Moraleda, of the Department of Agriculture, Chili, spent some days at Wenatchee, Wash., U.S.A. (one of the largest boxed-Apple producing centres of the United States), recently, in order to learn Apple-grading and packing methods.

A trial shipment of Plums to England from Victoria, carried successfully, and, meeting a short market, sold well. The quality, however, was poor, and only large Plums, in trays, are advised for future shipment.

Budding, Grafting and In-Arching of Fruit Trees.

(By J. M. Ward, Superintendent of Horticulture, Victoria.)

IN practically every fruit district in Australia, certain fruit trees have been planted which, at a later date, have been found unsuitable for the district; and in some cases a variety has been grown, for the produce of which there is little or no demand.

This has been much in evidence with certain varieties of Peaches planted for canning purposes in the irrigated areas of Victoria and New South Wales.

Then, again, in the planting of many of the early Apple orchards in Victoria and Tasmania, the then best known English varieties were planted for the British markets; but, at the present time, owing to the knowledge won by experiment, better keeping and shipping kinds are needed to replace such varieties as Ribstone Pippin, Mobb's Codling, Emperor Alexander, and others. The same thing applies to a lesser extent to Pears and other fruits. There is also the question of working certain varieties amongst other kinds for pollination purposes.

To grub old but healthy and productive trees and to replace them with young ones is an economic waste, for it means unnecessary hard work and loss of time. Such trees as those in question can be easily and quickly changed over to more profitable kinds, by means of grafting or budding.

As to which are the best of the different kinds of fruit trees to grow has been, and always will be, a difficult problem to solve. With the Peach, one has to consider the best kinds for canning, for drying, and for the fresh fruit markets; and with the Apple, there is quality, color, storage value, freedom from disease, and other qualities. Somewhat similar qualities are looked for in the Pear, Plum, Prune, Apricot, and citrus fruits; in fact, with all our fruits.

No doubt the Peach is the quickest to respond to the re-working over to another variety. Oranges and Lemons also respond very quickly. With most trees, if the grafting and budding be successfully accomplished, the newly worked buds or scions make rapid headway so far as growth is concerned, for the whole of the sap

from the well-established root system is concentrated upon developing these new growths.

The terms "stock," "scion," "bud-stick," "cambium layer," and "worked" will be referred to in this work, and they are thus defined—

1. **Stock.**—This is that portion of a tree—root or branch—on which a scion or bud is inserted.
2. **Scion.**—A portion of tree, usually one-year-old growth, containing one or more buds, and is that part which is grafted on to the stock.

3. **Bud-Stick.**—A part of the current season's growth from which buds are removed.

4. **Bud.**—A bud cut from a bud stick.

5. **Cambium Layer or Inner Bark.**—A thin layer of soft, greenish-colored tissue situated between the bark and the wood. It is the growing part of the tree.

6. **Worked.**—The term "worked" is usually employed when the operation of inserting the bud or scion on to the stock has taken place.

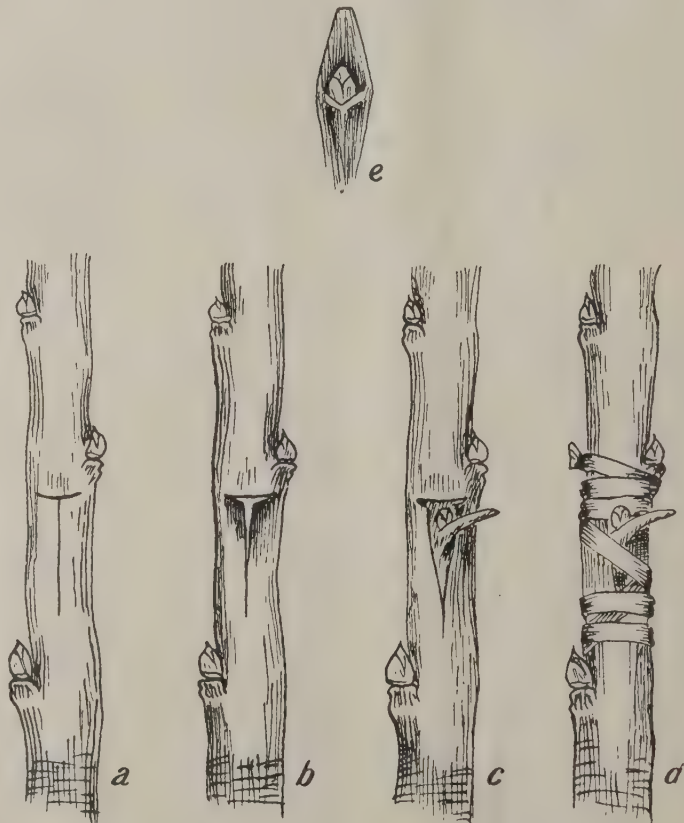


Fig. 1.—(a) T-shaped cut in the stock. (b) The bark raised ready to receive the bud. (c) The bud inserted for tying. (d) The job completed. (e) A well developed bud.

The several illustrations of grafting, etc., given in the following pages are to a large extent self-explanatory, and can be followed without very much description.

There are many methods of grafting in operation in various parts of the world, but only a few of these are put into practice where fruit trees are concerned. The commonest

variations, but the fruit-grower is usually concerned with the one in general practice. This is shown in Figures 1 and 2. Some operators prefer the inverted T. Budding is performed on deciduous trees during the months of December, January and February, when the sap is running freely, and buds should be inserted on the current year's growth.



Fig. 2.—Removing a bud from a bud stick.

Some budders prefer to remove the bud by commencing the cut from the top side of the bud. In this instance the cut is made upward.

are—The Whip, or Tongue, or Cleft, the Saddle, the Rind or Bark, and the Strap grafts.

Budding.

There is practically only one method employed when budding fruit trees. There are, however, a few

With citrus trees budding is done both during the autumn (March and April) and the spring (September and October).

The operation is a simple one, and with plenty of practice can be quickly performed. Only well-developed buds obtained from trees producing good quality fruit should be used.

Care should be taken in removing the bud from the "bud-stick"; it should not be cut too deeply; the small portion of the wood that is cut with the bud should be removed from Apricot, Peach, and Cherry buds, but with Apples, Pears, Plums, and citrus trees a thin portion may be allowed to remain with the bud. When removing the wood from any bud, great care must be exercised in seeing that the small pin-point of wood running to the eye of the bud is not removed, otherwise the bud will not "take." The stalk of the leaf is left on the bud; this acts as a handle when inserting the bud into place.

The bud is inserted just under the bark (next to the cambium layer) in a T-shape made in the stock, and is then securely tied with raffia or string. The bud is left in this condition until a good union results. The tie is then cut or loosened. The bud from a deciduous tree, or from the autumn-budded citrus, remains dormant until the following spring. (See Figures 3 and 4.) The citrus buds inserted in the spring will make growth the following summer. During the winter or spring months, the old wood is cut off just above the newly inserted bud (Fig. 3), and the new growth from the inserted bud becomes the future tree or main arm of the tree, as the case may be.

If budding over of old trees is desired, it is usual to cut the tree down during the dormant season; the buds are then inserted into the new spring growth that follows the hard cutting back; this is especially the case with citrus fruit trees.



Fig. 3.—Spring growth from autumn buds.

This picture gives a close-up of one of the young re-worked (budded) Navel Orange trees shown in Fig. 4. (Note where the old wood has been cut off above where the bud has started to grow.)



Fig. 4.—Young "dud" Washington Navel Orange trees worked-over by budding to buds taken from trees that produced good quality fruits. The trunks were lime-washed with a view to protecting the bark from the heat of the sun.



Fig. 5.—An Orange tree, 8 years old, showing the unions where the bud was inserted in the stock years before.

Stone fruit trees should be budded during December or January; the sap is usually running more freely in such trees during those months than later on.

The budding of Apples and Pears can take place during January and February, and in some seasons as late as March, but January and February are the usual months for budding pome fruits.

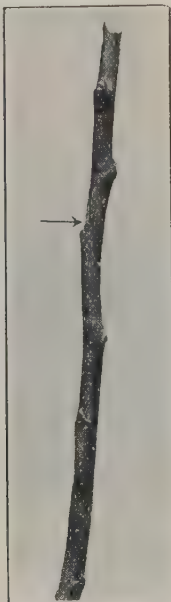


Fig. 6.—A Whip Graft.



Fig. 7.—The same graft as shown in Fig. 6, but taken a year later. The union between stock and scion is very noticeable.

To obtain successful results in budding, the following points should be observed:—

1. Use a very sharp knife; (2) use only well-matured buds; (3) bud when the sap is running well; (4) do not allow the sap on either bud or stock to become dry or brown; (5) the tie should receive attention a few weeks after budding takes place; (6) six weeks or so after the bud commences to grow, the new growth may require attention by way of staking or pinching back to prevent damage by wind. Do not hesitate to give the required attention.

Grafting.

As previously stated, there are a number of ways of grafting, and those most commonly practised in Victoria are here described.

The Whip or Cleft Graft.

The method is employed when scion and stock are of somewhat similar dimensions, or in instances where the stock is twice the thickness as the scion. It is both simple and effective. From three to five main arms containing young growth are selected, and a scion placed on each as follows:—Each limb is cut so that a long—1½ inches to 2 inches—smooth, slanting surface is obtained. This operation should be carried out by making one clean cut with a sharp knife.

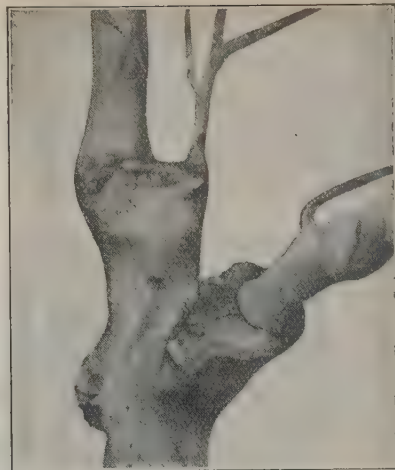


Fig. 8.—Showing where the saddle graft was made.

(Note the split in the wood and the unhealed parts of the stock. In such cases decay is liable to set up, and eventually the tree may smash down.)

The scion is then similarly treated and a small "tongue" made in the surface of both stock and scion (see Fig. 6). A union is made by bringing the cut surface together so that the two tongues fit into each other. Care must be taken to see that the cambium layers (inner bark) of both stock and scion come into close con-

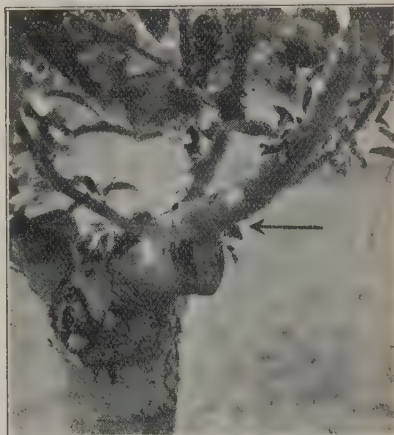


Fig. 9.—Showing a graft where the scion has been placed on the upper part of the limb and has become stronger and stronger each year. Had it been inserted on the lower portion of the limb the graft would sooner or later break down under its own weight.

(Note how the "strap" of the scion is growing over the face of the cut.)



Fig. 10.—Another instance where the scion has been correctly placed on the upper part of the limb.

(The "strap" has almost completely grown over the cut face of the branch.)

is done at the present time. It is used on limbs from 1 inch and upwards in diameter. The branches to be re-worked are cut back and split across the surface of the cut, and the scion, which is cut in a wedge-like shape, is inserted in this split in a manner that brings the cambium layer of the scion in close contact with the cambium layer of the stock. This graft is not recommended on account of many faults that may arise, also because there are better methods in practice.

Whilst in a number of instances the scion grows vigorously enough to heal up the split stock, there are many more instances where the split never heals (see Fig. 8). Fungi enter this part of the stock and decay takes place, and very often only a shell of sound wood on the outside circle of the grafted limb is left.

(See Figures 12, 13, and 14.)

tact with each other, otherwise failure will result. The grafted portions are then tied tightly together with raffia or other suitable material, and the whole waxed over.

The Whip or Cleft Graft is used for young stock in the nursery to a greater extent than any other graft.

This was practised to a more considerable extent some years ago than



Fig. 11.—The Bark or Rind Graft.

(Note how the bark of the stock is curling away from the wood of the stock, owing to the wood dying. Compare this with the illustrations showing the strap graft. The result of the wood decaying is that the tree sooner or later breaks down.)



Fig. 12.—Robe de Sergeant Prune "Top-worked" to Apricot stock with Rind Graft.

(Note decayed portion of trunk, where grafting has been done.)



Fig. 13.—A close-up view of the trunk of the tree shown in Fig. 12. Saddle Graft.

Although there are often more failures than successes with the Saddle Graft, the writer has seen some very good results from this method; nevertheless it is not recommended.

The Bark or Rind Graft.

This method, like the Saddle and Strap grafts, is employed for the reworking of trees having limbs an inch or more in diameter.

The tree which is to be worked over is cut down to about 6 to 12 inches above the crotch (where the main arms branch out from the trunk); selection is made of those parts which are in the best position to receive the scion (see Figures 9 and 10).

The scion is then prepared in a somewhat similar manner to the scion in the Whip Graft, but no tongue is made. A small portion of the bark at the opposite side of the cut may be removed; by doing this a better "take" is effected. Having prepared the scion, the bark on the stock is then prepared to receive the scion. This can be done in two ways. One is to make a simple straight cut with the point of the knife, about an inch or so in length down from the cut face of the limb; the bark is then gently eased away from the wood and the scion slipped in. The other way is to make two cuts in the bark about $\frac{1}{2}$ inch apart; the bark is then pushed away whilst the scion is put in place. The latter method is probably the more successful of the two, particularly for the beginner.

In view of the great success that has been achieved with the Strap Graft, the Bark or Rind Graft, like the Saddle Graft, is not recommended. The failure of these grafts after they "take" is not noticeable for a number of years later. In many instances the scions fail to cover or grow over the face of the cut limb. This can be seen in Figure 11, and is further illustrated in Figures 12, 13, and 14.

The Strap Graft.

For trees of similar size to those mentioned in the Bark Graft, or even for trees with limbs up to 6 inches in diameter, there is no better known method of grafting than the Strap Graft, so named from the "strap" which crosses over the cut surface of the limb. The scion is cut in such a manner that a strip of bark, together with a little wood attached (see Figures 15 and 16), is partly removed. This forms the "strap" as shown in Fig. 17.



Fig. 14.—Result of allowing wood in a Prune Tree to decay. Strap grafting would have prevented this.



Fig. 15.—Cutting the “strap” in scion ready for strap graft.

Note the bud near the end of strap (the portion raised). It is wise to have a bud so placed.

The wood from which the cut has been made is then removed by making a slanting cut about $1\frac{1}{2}$ inches long on the opposite side from that where the “strap” was cut. The length of the “strap” should be the diameter of the stock, plus about $1\frac{1}{2}$ inches. The scion is then ready for insertion into the stock, which is prepared in the same manner as explained in the Bark Graft, with the addition that the bark is also cut and eased away from the opposite side of the stock from where the scion is placed, so as to allow the insertion of a portion of the “strap” into the stock (see Fig. 18). The whole is then securely tied and waxed.

It is essential to carefully tie the “strap” hard down on to the surface of the cut. It will be found that the



Fig. 16.—The scion for a strap graft prepared ready for grafting.

“strap” will quickly grow and cover over the cut. This is well illustrated in the various plates. Although the explaining of the Strap Graft takes some little time, the operation itself is quickly performed, and after a little practice any grower can quickly become an expert Strap grafter.

The Strap Graft has many advantages over any other graft for the “top-working” or “re-working” of

established trees; one of the chief points is the rapid covering up of the cut surface of the stock, and thus decay in the stock is prevented. In addition to this there is more stability in a Strap-grafted tree than there is in a tree grafted by another method.

The foregoing article and illustrations are republished here by courtesy of the “Journal of Agriculture of Victoria.”

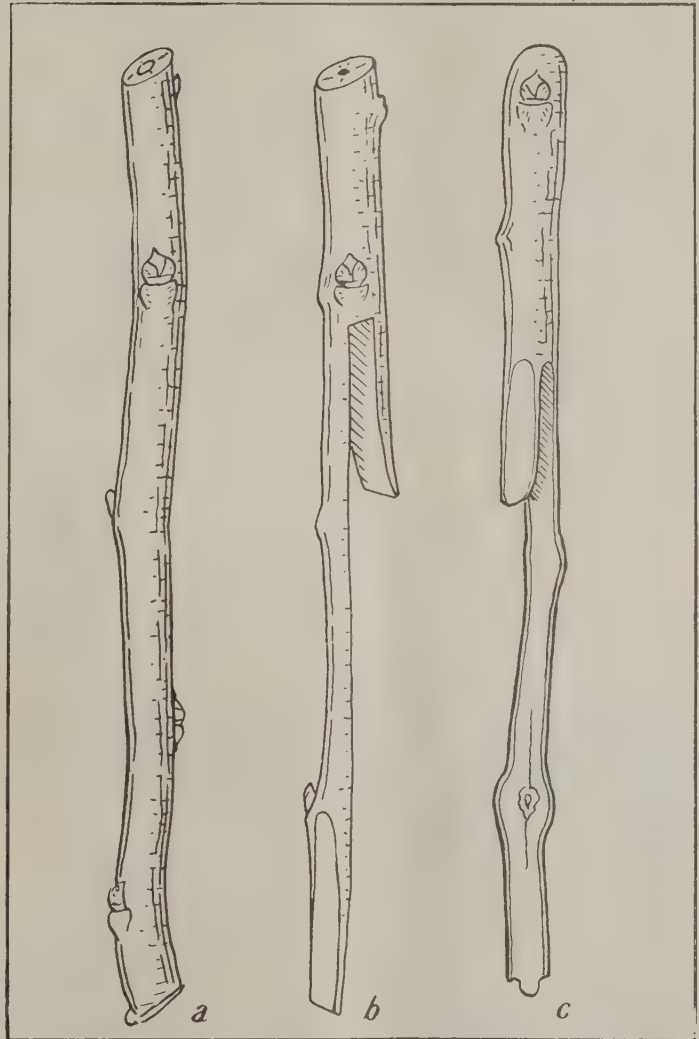


Fig. 17.—(a) The scion ready for preparation for the strap graft. (b) The same scion after preparation, showing portions of bark removed from the back part of the “strap.” (c) Another view of the scion showing where bark has been removed from another part of the scion.

(See page 254 for Figure 18.)

Tasmania

Fruit Packing Classes.

CLASSES for the instruction of adults and senior scholars attending State schools in the approved methods of packing and grading fruit for export, are now being held in the principal producing districts of Tasmania.

These will be continued as long as supplies of fruit are available, and at the conclusion of the season a series of tests will be held and certificates granted to those who attain a certain standard of competency.

Although the season has not been a favorable one, owing to the light crops, keen interest has been displayed both by the trainees and growers in the different districts, and attendances are generally satisfactory.

Classes have been conducted in the following centres:—

District A.—Instructor, Mr. A. S. Brennan.

	Maximum Attendance.	
	Scholars.	Adults.
Bagdad	10	7
Glen Huon	24	—

Geeveston	36	2
Dover	42	—
Castle Forbes Bay	27	—
Port Huon	18	—
Franklin	38	5
Bushy Park	9	7*

*One class held.

District B.—Instructor, Mr. W. C. Page.

Ranelagh	27	1
Huonville	45	—
Cradoc	8	—
Cygnnet—		
State School ..	35	—
Convent	24	—
Lymington	28	4
Grove	16	6
Kingston	22	5
Margate	14	8
Woodbridge	18	5
Middleton	12	4

District C.—Instructor, Mr. J. M. Jacklyn.

Spreyton	6	8
Exeter	9	—
Legana	8	—

Glengarry	8	—
Beaconsfield .. .	12	—
Swan Point	7	—
Winkleigh	9	—
W. Deviot	7	—

Total 519 62

Owing to the light crops in Northern Tasmania, the classes will not be continued after May, sufficient fruit not being available.

The Chief Horticulturist (Mr. P. H. Thomas) desires to thank the individual fruitgrowers, fruitgrowers' associations, and the managers of the different packing sheds, who have co-operated with the officers of the Division in making this training possible in providing sheds, accommodation, fruit and packing materials for the classes.

The results of the tuition of previous years is already showing in the improvement that has been noticeable in the packing and favorably commented upon by the wharf inspectors. In a number of districts also former pupils are taking their places in the packing sheds and in some instances occupy responsible positions.

600 ACRES FOR EXPERIMENTAL WORK.

Horticultural Demonstration in U.S.A.

Prof. Neilson, Canadian Horticultural Expert, in Charge.

The value of experimental work is fully appreciated in the United States. Apart from Government activities, private individuals generously assisted.

The Michigan State College has recently come into possession of 600 acres to be used for experimental and demonstration purposes, the gift of Dr. J. H. Kellogg, the head of the Battle Creek Sanitarium, who has equipped this farm with a fine set of buildings and provided a trust fund of \$40,000, the interest from which is to be used to operate the farm.

The experimental work includes: projects in field crops, stock feeding and breeding, forestry and certain branches of horticulture. A portion of the farm will be devoted to experimental work in nut culture. In addition, Dr. Kellogg has provided a special fund of \$2,000 to finance nut investigations at the Michigan State College. Prof. James E. Neilson, Ontario Department of Agriculture, is in charge. — "American Nurseryman."



Fig. 18.—(a) The scion of the strap graft inserted ready for tying. (b) After tying and awaiting waxing.

(See previous page.)

Fruitgrowers' Conferences in New South Wales.

Important District and Central Meetings.

Local and Export Marketing: Pest Control: Scientific Research: "Canadian" Standard Case
Favored: Better Distribution and Advertising.

IMPORTANT CONFERENCES of fruitgrowers were held at several places in New South Wales during May and June. These were under the auspices of the N.S.W. Fruitgrowers' Federation.

Gosford.

At Gosford delegates decided to request the total prohibition of citrus fruit from abroad. The "topping" of fruit was condemned, and it was decided to ask the Department to strictly enforce the regulations; also that the Department conduct manurial experiments in the coastal districts, and tests regarding the safety of sprays and experiments in the keeping qualities of fruit.

The necessity for better organisation to secure effective distribution of fruit was emphasised, and it was decided to assist the formation of local co-operatives with the idea that such should work through a central marketing organisation. It was decided to request the Railways Department that bluestone be carried on the railways at fertiliser rates, and that fertilisers be placed in bags of 16 instead of 12 to the ton.

Yenda.

Fruitgrowers in the Murrumbidgee (N.S.W.) irrigation areas held their annual conference at Yenda, and many matters affecting the industry were discussed. Need for continued research work was dealt with in several of the resolutions. It was decided to request the Council for Scientific and Industrial Research to study the production of pure fruit beverages. Delegates expressed the conviction that the utilising of surplus fruits as fresh fruit drinks would be of great service. It was also decided to ask that regulations be enforced for the effective labelling of fruit drinks, so that the public could instantly discern between the fresh fruit drinks and those of a synthetic basis.

Differences of opinion were expressed regarding the practice of coloring Oranges by ethylene gas and other means, and it was decided to ask the Department of Agri-

culture for its opinion on the matter, and also the best methods for doing the work.

Codlin Moth.

The prevalence of the codlin moth was stated to be disturbing. In the discussion growers expressed divergent views regarding control methods. Finally it was decided to request the Department of Agriculture to carry out tests with the dusting method; that the number of compulsory sprayings be increased, and the use of bandages be left optional. Further, that the regulations be amended to permit the use of the dust gun as an alternative to spraying.

Dried Fruits.

Here again the aid of science was invoked, the conference requesting the Science Council to make available the services of an analyst at the Griffith Research Station to test the sulphur dioxide of dried fruits on behalf of growers during the drying period. This resolution followed the request that the Commonwealth authorities permit an increase in sulphur dioxide in dried fruits from seven grains to fourteen grains to the lb. The Department of Agriculture is being asked to give the completest information possible regarding the most effective use of sulphur dioxide to keep within the prescribed limit and as to the best method of correcting any mistakes in over-sulphuring fruit.

Peach Aphis.

The establishment of an insectarium on the Murrumbidgee irrigation areas was requested in order to carry on research work in regard to the control of Peach aphis. Growers desire to know the life history of the Peach aphis, the host plant when it leaves the Peach trees in the early summer until autumn. At the proposed insectarium, parasites could be bred and distributed.

It was decided to ask the Commonwealth Department of Markets and Transport to declare a standard weight for Grapes for export.

The Railway Department was requested to take steps to have fruit handled more gently on the railways.

The subject of fruit importation evoked a lengthy discussion, in which opposing views were expressed. Some growers desired that fruit grown outside the Empire be prohibited from importation. As this scheme was deemed to be impracticable, it was eventually decided to request that the subject of the importation of foreign fruits be thoroughly investigated with the purpose of imposing tariffs or embargoes in order to protect the Australian fruit industry without drastic effect upon reciprocal trade.

Windsor.

On May 4 there was a large assemblage of fruitgrowers at Windsor, delegates attending from all parts of the Hawkesbury region and coastal fruit-producing centres.

The Citrus Industry.

It was decided to request an embargo on the importation of citrus, to prevent the introduction of diseases, and also because of the difficulty of developing profitable export.

The manager of the N.S.W. Central Citrus Association, Mr. H. G. Such, urged close organisation of growers as the existing system of distributing citrus was unsatisfactory. In order to avoid future heavy losses, Mr. Such advocated the formation of a committee to examine opportunities for better organisation and better marketing—to which the conference assented by resolution.

The necessity for developing overseas markets was emphasised, and a resolution was carried requesting the Minister for Markets to subsidise up to the ruling market rates, those growers who submitted fruit for export. The conference further decided that there was need for subsidised shipping to secure cold storage accommodation for Chinese markets.

It being stated that refrigerated space was cornered for ships trading with Canada and Pacific countries, it was decided to request Federal action be taken to prevent such practise.

Railway Department's Assistance.

The conference decided to express cordial appreciation to the Railway Commissioners for assisting in the sale of fruit on railway premises.

Government and Industry.

There was a lengthy debate regarding the Murrumbidgee irrigation system, some delegates affirming that growers on the Murrumbidgee irrigation area were receiv-

ing preferential treatment. It was finally decided to request the Government to withdraw from further participation in irrigation matters; and further, to withdraw from all trading, in order that no additional losses might be incurred to the State's finances.

The fruit fly restrictions on the Victorian border were deemed to be oppressive, and it was decided by re-

solution to request that these be modified in order to allow for the rejection of infected fruit only, the balance of the consignments to be permitted entry.

As the charge for fumigation of fruit at the Government chambers was deemed excessive, it was decided to request that the charge be reduced from 2d. to 1d.

N.S.W. Fruitgrowers' Federation

Annual Conference at Sydney

"AUSTRALIA is indeed richly endowed in many ways," said the Governor (Sir Dudley de Chair) when opening the annual conference in Sydney, of the Fruitgrowers' Federation of N.S.W., on June 16, "but in no way more so than in regard to the growth of fruit of all kinds.

"No other country in the world," he continued, "could vie with her in this respect. In every season of the year there should be an abundance of fruit for everyone and a large exportable surplus, either in its natural state or in the forms of preserved or evaporated fruits."

All that was necessary to make the fruit industry a profitable one, he said, was for growers to pull together, to organise, and to encourage a policy of co-operation in the broadest sense between growers and consumers.

The Governor was welcomed by Mr. James Heane, President of the Federation and the Secretary (Mr. E. E. Herrod).

An apology was received from the Minister for Agriculture (Mr. Thorby), who is attending a States conference in Melbourne.

Eating More Fruit.

The Railway Commissioners were heartily congratulated and commended by the President for the way they had encouraged the sale of fruit—Oranges and Grapes especially—on New South Wales stations. Some idea of the large quantities of fruit sold in this manner would be gained from the fact that one contract alone was for 75,000 cases of Oranges.

Commenting upon developments in the industry during the past year, the President said his Committee came to the conclusion that a marketing board for fruit was very inadvisable at present. At the same time, however, they were anxious to appoint a market representative to watch the interests of the producers. The agents were undoubt-

edly wanting higher rates. The fruitgrowers, though not anxious to be exploited, were equally anxious that the agents should be paid a fair remuneration. If the agents put up a good case to the Minister, he added, it was quite likely that their request would be granted.

Permanent fruit stands in the city were in the interests of the growers, he considered as undoubtedly they disposed of large quantities of fruit. The growers were not in favor, however, of the large numbers of barrows that sprang up in Sydney some time ago; they were harmful, and certainly not in the best interests of the industry.

"Canadian" Standard Case.

The first matter of importance that came before the conference was the question of the adoption or rejection of the Canadian standardised case. This was in response to an urgent request from the Minister in Melbourne, who said he was anxious to obtain the view of the conference, in order to place it before the conference of Ministers of Agriculture.

The conference decided unanimously in favor of the Canadian case.

Marketing.

In a special report on marketing to the conference, the Federation's Board said: "There can be no doubt that there is considerable room for improvement, and, as the whole question of the distribution of fruit is affected by the conditions that prevail in the markets, it is imperative that early steps should be taken to initiate proposals for their improvement. The Board has considered the question of the constitution of marketing boards under the Marketing of Primary Products Act, but is not prepared at present to recommend this procedure."

The Board considered, in view of all the circumstances governing the city market facilities, in that the markets were the property of the civic authorities, an executive board

would not be practicable, and recommended that the control of the markets by the civic authorities should be assisted by an advisory board, which would include representatives of the Fruitgrowers' Federation of N.S.W., the N.S.W. Fruit and Vegetable Agents' Association, and the fruit section of the Chamber of Commerce.

As the question of marketing operations and practice appeared of more importance than the control of the actual market buildings, the board was firmly of opinion that a suitable agreement as between the agent and the Federation should be prepared. The agents entering into the agreement would then constitute a list of accredited agents to whom all growers would be recommended to consign their fruit.

Conference discussed at some length the report submitted by the Board dealing with provision and control of markets, and adopted it on the motion of Mr. MacKenzie (Yenda).

Backyard Orchards.

"The backyard orchards are a curse," said Mr. E. Ray (Bathurst), who supported a motion which advocated the removal of the exemption at present existing, under which areas of a quarter of an acre were not required to register, so that all orchards, irrespective of size, should be registered. The minimum registration fee, he declared, should be 1/- and not 10/-, as suggested by the motion.

Conference eventually decided that the registration fee should be 1/-, rejecting 10/- and a further amendment of 2/6.

Mr. Brann then moved that the whole of the moneys collected from orchard registration fees should be handed over to the Federation. The principle was affirmed, though the conference decided that the costs of collection should be deducted.

Commission Agents.

The conference spent some time discussing agents' rates of commission. It was decided to withdraw a remit from the metropolitan district, that in view of the agents' efforts to obtain sanction to charging

12½ per cent. commission on fruit sales instead of 7½, as at present, the conference protest against this power being given until the growers were satisfied that they received advantages equivalent to the extra cost. The conference contented itself with a simple protest against any increase in commission.

Control of Fruit Fly.

Considerable alarm was expressed at the increase of fruit fly among orchards, particularly in the west, and attention was drawn to the decision of the American Government to expend \$200,000 for the elimination of this pest, which recently made its appearance in Florida. The conference called upon the New South Wales Government to control the fly. Despite the fact that delegates denied that far too many inspectors were being appointed, as suggested by one speaker, conference rejected a motion giving fruit inspectors power to prosecute offenders against the fly regulations without the necessity of having to serve notice. A majority were of opinion that the inspectors already had sufficient powers.

"That efforts be made to have the fly restrictions on the Victorian border modified and the balance of the fruit in the consignment being allowed entry into Victoria," a metropolitan district motion, evoked the statement that Victoria was deliberately preventing the entry of New South Wales fruit into that State.

The proposal was unanimously rejected.

The alarm of "clean" districts was expressed in the following remit from the Central Tablelands district: "That conference, realising the urgent necessity for keeping the district free from fly, urges upon the Government the absolute necessity for the rigid enforcement of the restrictions governing the entry of infected fruit into the district, and that more inspectors be appointed to ensure that shops and other retailers are subject to frequent inspections, and that the Government Entomologist now investigating codlin moth at the Bathurst Experiment Farm be also made available to investigate fruit fly and its habits in this district."

Danger of Fire Blight.

The fact that fire blight had not been eliminated in New Zealand was advanced by Mr. Ray, who convinced conference of the necessity of combating any attempt to lift the embargo on the importation of Apples and Pears. As the season was a light one for Apples, he said, it was quite likely that the merchants would move for permission to import Apples from the United States.

Appreciation was expressed at the action of the Department in instituting a codlin moth investigation at the Bathurst experiment farm.

The conference also decided to ask the Government Entomologist to instruct orchardists in the breeding, fostering, and protecting of parasites, and that an insectarium be established on the Murrumbidgee irrigation area.

It was decided to advise the Government that it was essential that an Act should be introduced to compel merchants to guarantee the purity of effective strength of any materials or compounds used for the control of pests or diseases.

The State Marketing Bureau was asked to arrange with the Sydney press to publish daily fruit marketing information as broadcast.

Several speakers complained that not only were the market reports in the newspapers inadequate, but they were unreliable. Instances were given of discrepancies of as much as 2/- a case.

Another marketing resolution, which met with favor, recommended that Federal action be taken to prevent cornering of shipping space to the Canadian and Indian markets.

"I do not like to see motions coming forward which I know it is not practicable to put into effect," said the President, concerning a request to the Federal Government to subsidise up to local parity all fruit exported overseas other than to New Zealand. Conference rejected the proposal.

The conference will be continued this morning.

Fruit for Hull.

The possibility of a direct shipment of Australian fruit to Hull, was indicated by Mr. B. C. Criswick, representative in Australia for the London and North-east Railway Company, who addressed the conference on the advantages of that city as a marketing and distribution centre. The shipping company with which he had been negotiating, said Mr. Criswick, had promised a cut of 10 per cent. on ordinary freight rates. He appealed for support for the project. Hull was at the moment, he said, competing with a London ring. The port was only too anxious for the Australian fruits. "Here you have a port catering for 12,000,000 people," he added, "simply asking for your produce. They want your fruits."

The President said the Federation's Board would take up the question of a direct shipment to Hull.

One delegate summed up the opinion of several speakers when he said: "I hope we will support this

scheme. We have everything to gain in sending our fruit to Hull and nothing at all to lose."

Better Distribution.

Conference appointed the following sub-committee to consider the problem of better distribution, and report later: Messrs. H. V. Smith (Batlow), R. Wood (Pitt Town), T. A. Tester (Young), H. G. Such (Griffith), and A. V. Tonking (Orange).

Mr. Such moved: "That the existing system of disposing of citrus fruit produced in New South Wales is unsatisfactory, and that closer organisation of growers is necessary to avoid future heavy losses; that a committee be formed by the Board to consider in what districts and to what extent organisations for better marketing can be attempted with a reasonable chance of success.

It was essential, said Mr. Such, that New South Wales, should eat more Oranges. New Zealand was overstocked from this State last year, and it was likely that Queensland and Victoria would take less in the way of supplies in the future. The citrus situation required very careful consideration.

Conference approved of the remit.

When returning thanks for his reelection as President for an eighth term, Mr. Heane said the principal problem that the new Board would have to face was distribution and increased sales. "That is our aim," he said, "and I hope we will succeed."

Conference decided, at the request of Central Coast delegates, that the present regulations concerning the retail sale of fruit should be strictly enforced. Shopkeepers were also directed to place the name of the variety on fruit exposed for sale.

A suggestion from the Central Tablelands district that suitable fruit from Government experiment farms, supplemented by fruit from commercial orchards, should be used for experimental marketing, both for opening up new markets and improving conditions on markets already established, was commended.

Southern district delegates urged the Federation to continue its efforts for the retention of fruit stalls.

The election of the Board resulted:—Messrs. J. Heane, H. S. Wark, A. V. Tonking, F. Helson, H. G. Such, T. A. Tester, A. E. Herring, A. J. Taylor, W. W. Challis, A. F. Dunstan, J. Neil, R. Hill, and W. E. Kirkness.

It was decided to ask fruit inspectors to report regularly upon the quantity and condition of crops in their district, and to call upon the State Marketing Bureau to obtain crop estimates from time to time of

the main varieties in the different States that supply the Sydney markets.

In order to encourage a greater consumption of fruit, the conference referred to the Board a proposal to impose a per case levy to be used for advertising purposes. The following remit concerning by-products was also referred to the Board:—That the recommendation from Batlow, with regard to the request that the Department should send a delegation to America to investigate the utilisation of lower grade Apples and Pears in the manufacture of cider, vinegar, and other saleable products, and which was deferred until 1929, should be again brought forward and strongly urged.

Markets Extension.

The conference was addressed by Mr. J. N. Breden, comptroller of assets, on behalf of the Civic Commissioners. He said that it had been decided to resume an additional area near Hay-street, which would provide another four or five acres of space. Every part of the market, if possible, would be served by a street.

The Commissioners were also considering the erection of a new vegetable market, said Mr. Breden, which would give considerable relief. The present vegetable section would be made available for fruit interests. Facilities for the sale of fruit would be double the area now available. The expansion scheme outlined would eventually cost in the vicinity of £500,000.

Mr. Breden expressed satisfaction at the decision of the conference to appoint a special representative at the markets. "I think this move will be in the interests of all concerned," he said, "and I will do all I can to make his path pleasant."

The conference placed on the list of approved cases one with a division in the centre, and the dimensions of which were 26in. x 5 x 6. This case was in particular favor with Cherry growers, but was superseded by the 12 lb. box. Growers in the southern district considered that this box would carry Cherries in much better condition.

As the rough handling of fruit in transit resulted in considerable loss to fruitgrowers, the Railway Department was asked to take steps to ensure more careful handling.

Railway Requests.

Railway matters occupied the last portion of the session, when Mr. C. J. Goode, chief goods manager, was present on behalf of the Railway Commissioners to answer questions and explain the Department's policy.

Conference approved of a southern

remit that consignors who ordered trucks of a special capacity should be charged freight for the size of the truck, and not the full rate of a larger truck when one of a larger capacity was made available as is now the custom. The Commissioners were asked to reduce the present minimum loading required in instances where it was impossible to load trucks to such capacity. In view of the extensive use of blue-stone for the checking of certain fruit diseases the Commissioners were asked to carry it at fertiliser rates.

When the vegetable output from the irrigation area assumed larger proportions, Mr. Goode promised to arrange special freight charges for growers.

The President said he was particularly pleased with Mr. Goode's explanations. "Many difficulties have been cleared up," he said, "and delegates have received some very valuable information."

In reply to a complaint from the northern, irrigation, and metropolitan districts concerning the rough handling of fruit on the railways, Mr. Goode promised to repeat the usual instructions to the railway staff. "And we will see that they are carried out," he added.

That provision be made for the loading of fruit on interstate boats on Saturday mornings was another remit carried by the conference.

Third Day's Session.

Delegates at the conference of the Fruitgrowers' Federation of New South Wales agreed that this year's gathering may be classed as one of the most successful in its history. The concluding session was held June 14, when Mr. James Heane presided.

Better Distribution.

The special committee, which reported on better distribution methods, declared that with control, distribution along certain lines seemed possible. Without control, no scheme considered by the committee was deemed feasible. It was believed that by arrangement with the Railway Department the distribution of case lots could be greatly increased to mutual advantage. Organisations could be inaugurated, which would be capable of direct trade with consumers, retailers, and country auctioneers. Consignments could be made to outside markets, which would not be interfered with by the competition of outside interests. It would be possible to establish large retail shops at distributing centres in the suburbs, controlled by associations of organised growers. This applied

particularly to industrial centres.

The Committee suggested that means be adopted in the various districts to process the lower classes of fruits, so that they might be kept off the markets. Other points suggested as advisable in the interests of better distribution, included: (1) Controlled export; (2) systematic advertising; (3) further extension of retail railway distribution (for example, a carton trade of fresh and dried fruits); (4) the stimulation of direct trade from grower to consumer, due precautions being taken to ensure satisfaction being given. The report, which was presented by Mr. A. V. Tonking (Orange) was unanimously adopted.

Conference, by a narrow majority, decided that the Hawkesbury area should not be made into a separate district.

Conference decided to request the Government to establish a maturity test for citrus, which took into consideration both acid and sugar, and also the proportion which these two constituents bore to each other, and to amend the regulation accordingly.

A motion was agreed to asking the Agricultural Department to enforce the regulations governing the marketing of "dry" Oranges, with a view to their elimination from the market.

The following remit from the Board was endorsed: That "special" grade in the citrus grading regulations be amended to allow of all the fruit in the grade to carry blemishes up to 2½ per cent. of the superficial area of each individual fruit, and that "factory" grade be amended by the alteration of the name "factory" to "D."

Efforts are to be made to have the charge for the fumigation of fruit at the Government fumigating chambers reduced.

As to the Federal proposal to amend the export regulations for Apples and Pears, conference considered that the Australian grading regulations should be altered to bring them into conformity with those of U.S.A., Canada, and New Zealand. The Department was called upon to make representations to this effect to the Federal authorities.

Conference approved of the principle of co-operative societies being allowed to invest in non-co-operating companies.

The Commonwealth authorities were to be requested to declare a standard weight per case applicable to all Grapes for export. The remit had the support of delegates from the irrigation areas district.—"Sydney Morning Herald."

Oil Sprays for Codlin Moth.

Experiments in America and Australia.

Some Promising Results.

"Arsenate of Lead for First Brood, Oil for the Second Brood."

NEW LIGHT on orchard cultural practice is steadily being opened up: scientists are working with growers to discover new and improved methods.

At Harcourt, Victoria, an important fruitgrowing centre, experiments have been carried out by the Department of Agriculture, using oil sprays for assisting in codlin moth control. These experiments, which were conducted by Mr. G. T. Levick, B. Agr., Sc., Assistant Government Entomologist, are referred to in detail later in this article. American experiences in this connection are also available.

Mr. Jas. H. Lang, a well-known fruitgrower, of Harcourt, who has been taking note of these new developments, has sent in for publication the results of both American and Australian tests. The details from U.S.A. are taken from an article in the "American Fruitgrower Magazine," in its issue of February, 1929, as follows:—

American Experiments.

AN AWAKENED APPRECIATION of the effectiveness and value of oil sprays in general, together with a growing realisation that the many different kinds of oils of varying degrees of refinement and other physical and chemical properties might easily have a distinct bearing on their effect on trees in leaf, have suggested the possibility that oils might be successfully and safely utilised for the control of certain species of insects infesting fruit trees under summer conditions.

Extended study and experimentation along these lines has indeed already shown that certain insects not heretofore considered susceptible subjects for control by oil do yield satisfactorily to its effect. They have also demonstrated that certain special types of oils may be used with a much greater degree of safety on trees and plants in leaf than can certain other types of oils or oil preparations. Thus there has emerged into the oil insecticide field what may be termed the summer or white oil sprays.

Extensive investigation

has proved that the so-called white oils are less injurious to foliage, fruit or other plant parts than the less refined oils of the lubricating types.

A white oil is one in which the process of refinement has been carried to a point where a large percentage of its original unsaturated hydrocarbon content has been removed, and this ordinarily results also in the removal of most of its color—hence the general designation, "white oil." It appears that it is the unsaturated hydrocarbon elements in petroleum oils which are most instrumental in causing plant injury. Thus, the elimination of these injurious elements results in a material decidedly less injurious than one in which they are still present to a degree sufficient to cause damage.

The kind of emulsifier used to prepare the finished spray product is of importance also. Thus, a given white oil emulsified with a chemically active emulsifier, such as a soap, for example, may be nearly or quite as injurious as a less refined oil emulsified with a special non-soap emulsifier. A white oil prepared with such a special emulsifier produces the safest spray, all other things being equal.

Viscosity (body), volatility, breaking quality and other factors also unquestionably have a bearing on the relative safety of a given summer oil spray.

A knowledge of the above principles has progressed to a point where it has become possible to prepare summer or white oil sprays which can be used in effective concentrations on certain trees and plants with a degree of safety from possible injury favorably comparable with other established insecticides.

Oil Sprays for Codlin Moth.

We are still a long way from knowing positively all of the uses to which these new types of oil sprays may profitably be applied, of course. But there is one important use which has received special attention and a sufficient amount of investigation to warrant a discussion of the relationship summer oils bear to it and pretty definite conclusions as to their present status. I refer to summer oils for the codlin moth.

Two factors are especially responsible for the recent lively interest in summer oils as a possible means of control of this insect. They are:—

(1) The arsenical residue problem; and

(2) Unsatisfactory control by long-established standard sprays.

The second factor has been responsible, undoubtedly, in some degree at least, for the development of the first. There have been evident indications that the established programme on arsenical sprays has not succeeded in controlling the codlin moth as satisfactorily as in former years.

In certain cases it has been demonstrated that reported failures have been at least partially due to other factors, such as failure to spray thoroughly, poor orchard and packing shed sanitation, unusually favorable conditions for codlin moth development, and the like.

However, the fact remains that for one reason or another there has been noted a tendency in some sections toward the necessity of using an increased number of sprays or increased concentrations in order to secure adequate protection. Even where this has been done, the results have not always proved entirely satisfactory, especially as regards the sting type of worm injury.

Meeting the Spray Residue Situation.

In order to meet this situation, active attention has been directed toward the discovery of possible effective non-arsenical sprays. One of the first of such materials suggested has been oil.

From the safety standpoint, white oil emulsions of a certain type offered the best possibility, and, as stated above, have now been developed to a point where the safety requirement appears to be well satisfied, so far as experience thus far will disclose. The next fact to be determined was the effectiveness of such oils in controlling codlin moth and the best way of using them.

Two rather distinct lines of approach to this problem, suggested by conceptions of the possible ways in which an application of oil might react on the codlin moth, and also by a consideration of the best ways of reducing residues, have been adopted in investigations in different Apple-growing sections of this country.

The first thought presented was that oil might serve either in immediately

killing the eggs

or young hatched worms not yet inside the fruit, or as a possible repellent in preventing the mothers from depositing eggs. In any event, about the only hope entertained at first was that oil might serve as an aid to arsenate of lead, and with this in view a considerable amount of early investigation was devoted to a use of the oil in combination with arsenicals, largely in the first brood or early summer sprays. Such experiments showed that the addition of oil in this way did increase the protection afforded the fruit from attack and injury.

Carefully observed experiments showed that the oil was successful in killing a considerable percentage of the eggs, and that it would also kill newly hatched larvae exposed to direct contact. Other experiments have indicated that there is little, if any, repellent influence of oil against egg depositions by the moths. This has led to a rather prevalent notion that oil must have no value against this insect except as a direct immediate contact spray for eggs and larvae.

It has also been observed that oil combined with arsenate of lead acts as an adhesive for the lead, and this undoubtedly in itself aids in control. So, while it was demonstrated that a superior control of first brood worms could be secured by the above method, it was not plain that this control might be sufficiently complete to justify the wisdom of omitting second or third brood sprays.

Thus, the above method offered no particular solution of the problem of reducing residues late in the season, and, in fact, tended, if anything, to aggravate the residue difficulty.

The next distinct possibility presented was that the film of oil left on leaves, twigs and fruit might in some way afford protection from worm entrance into the fruit by larvae hatching after application of the spray. It was considered possible that this oil film might kill the tiny young worms as they crawled over or through it or might serve as a physical means of interfering with normal worm activities so as to prevent successful entrance.

Accordingly, experiments in which oil was applied to Apples, after which newly hatched worms were placed on such fruit at varying intervals, were performed. These tests showed that such treatment did actually operate in killing or otherwise affecting the larvae, so that considerable protection, in some cases

of high degree, was afforded the treated fruit.

Oil as a Substitute for Arsenicals.

These results led to a conception of the possibility of utilising oil alone as a complete substitute for other insecticidal sprays in second brood or later season applications, thus contributing toward a solution of the residue problem as well.

Thus, for the past several seasons, a concentrated and extensive effort has been made by means of field experiments and practical orchard trials to determine how white oil emulsions of a certain type and grade used alone as a complete substitute for arsenicals will perform in controlling the codlin moth and function generally as a practicable orchard spray.

Such experiments and trials of which we have knowledge were most extensive and significant in the summer of 1928. The results of these may be briefly summarised, as follows:—

Treatment	Per cent. of fruit stung	Per cent. of fruit wormy	Per cent. of total injury	Per cent. of clean fruit
Standard arsenical for 1st brood—				
Summer Oil Emulsion for 2nd brood.	12.6	12.9	19.8	80.2
Standard arsenical throughout.	21.8	14.7	27.0	73.0

Results of Experiments With Oil.

The above figures indicate that where oil was used alone for second brood codlin moth as a substitute for arsenicals, it resulted in the production of about seven per cent. more fruit free of any kind of codlin moth injury. The percentage of worm entrance injury or wormy fruit was only a trifle less on the oil plots, but sting injury was rather strikingly less.

In all these trials the oil emulsion was used at two per cent concentration (two gallons to 98 gallons of water).

In the tests where the oil was used in earlier sprays in combination with arsenate of lead, the results were favorable so far as codlin moth control was concerned, but no better than where the oil was used alone in second brood sprays preceded by standard arsenicals.

Where oil was used throughout the season as a complete substitute for arsenicals, the results were not fully equal to those obtained from a standard arsenical program throughout. Furthermore, one case was noted where a heavy schedule of oil spraying (five to eight applications), in both early and late season, resulted in injury in the form of dropping.

These indications, together with the necessity of using a fungicide such as lime-sulphur in early sprays for scab control, with which oil cannot yet be used without danger of injury, all suggest strongly that the use of oil for second brood sprays only is at present the sounder practice. Where this practice was followed, no clear evidence of injury to fruit or foliage was noted where white oil emulsions of the best type were employed, although in one case, of an orchard located in an especially dry and hot section, some of the oil-sprayed fruit was more deeply colored on one side than fruit receiving no oil.

From the extensive and unusually consistent evidence thus produced by the tests above recorded from over 20 orchards in six States, operating under varying conditions of climate, severity of codlin moth attack, and methods of use, it seems quite safe to say that a properly compounded white oil emulsion applied at two per cent. strength in second brood sprays may be relied upon to give a control of codlin moth at least equal and possibly somewhat superior to that which may be secured from the use of an arsenical throughout the season.

The possibility of using white oil emulsion as a substitute for arsenicals in the later summer sprays to avoid excessive residues where necessary, seems therefore well established.

* * *

Experiments at Harcourt.

THE EXPERIMENTS AT HAR-COURT were initiated by the Department of Agriculture in the 1926-27 season, on the property of Mr. T. Code, and hereunder is an account of the work done and results obtained last season. The objects of the experiments were threefold, namely, to reduce the amount of arsenical residue on sprayed Apples by combining ovicidal (egg-killing) materials with arsenate of lead; secondly, to time the ordinary arsenical sprays (having regard to life history records), so that each spray would have the maximum effect, and thus reduce the number of sprays necessary to control the moth; and, thirdly, to discover the strength of arsenate of lead that is most effective.

All sprays were applied with a gun spray, at a pressure of 250-300 lb. per square inch. Arsenate of lead in paste form was used throughout. Blocks A1, A2, A3, and A4 consisted of ten trees each, while blocks B, C, and D contained 50 trees each.

Block A1.—Arsenate of lead and nicotine sulphate, four applications, October 17 to December 29.

Block A2.—Arsenate of lead and lime-sulphur, four applications, same dates.

Block A3.—Arsenate of lead, two applications, October 17 and 24.

"Volck" spraying oil 1 in 32, three applications, November 21, December 12, January 3.

Block A4.—Arsenate of lead, four applications, as in A1.

Block No.	Per Cent. affected by Codlin.	Average Per Cent.
A1	9.3—20.0	15.3
A2	11.2—17.8	14.9
A3	0.0—9.1	4.7
A4	15.8—23.0	21.5

These results show two outstanding features:—

(1) With conditions such as obtained this season, arsenate of lead alone failed to give a satisfactory control. It must, however, be remembered that the trees were large and old, and that in computing the results all Apples, including wind-falls, during the growing season, were counted.

(2) The only block which showed a satisfactory result, A3, treated with two calyx sprays of arsenate of lead, followed by three sprayings with "Volck" summer spraying oil, 1 in 32, stood out from the beginning of the fruit season. It was only late in the season that any attack by codlin moth could be detected, and this seems to be by far the most promising line of investigation, and will be extended considerably next year. The strength used (1 in 32) was concentrated, but no sign of burning or injury to the trees was to be seen except to a very minor degree in one case, where the barrel was pumped right out on a tree and slight foliage burn resulted.

* * *

"IT IS INTERESTING," states Mr. Lang, in conclusion, "to compare the results of these two experiments and to note that the most satisfactory control was obtained by arsenical sprays for the first brood and oil emulsion for the second.

"In 1927-28 I experimented with oil sprays in combination with arsenical. The most satisfactory result was obtained by combining one gallon of oil (Clensel) with each 100 gallons of arsenical sprays. The absence of codlin injury, especially stings, was very marked. Oil throughout the season in substitution for arsenate of lead proved unsatisfactory, though oil alone 1 in 40 gave good results in February."

Fruit Preserving Industry.

The Leeton Cannery—Proposals for Growers to Lease: Government Advances to Canneries: Adverse Sugar Position.

AS the fruit cannery at Leeton has been non-paying for many years, proposals are being considered for its future operations. The Auditor-General of New South Wales stated in his recent annual report that the accumulated deficits of the Murrumbidgee irrigation area is £5,034,864, and that the State cannery at Leeton had cost £130,000 in

in hand. Those settlers in favor of leasing the cannery contend that the business is greatly over capitalised, and that at least 50 per cent. should be written off by the Government. On the other hand, there are growers who object to the leasing proposal because of the financial responsibilities.

In the statement issued recently by the Associated Proprietary Canners of New South Wales, the suggestion was made that the N.S.W. Government should follow the lead of Queensland in getting rid of State enterprise.

This statement further points out "that in Victoria the State Government has invested £750,000. Nowhere else in the world has any branch of private enterprise been so unfairly assailed by Governmental interference as the fruit canning and jam-making business in Australia. In consequence, proprietary concerns are employing 50 per cent. fewer operatives."

The Sugar Position.

"During the past two years the Federal Government has allowed hundreds of thousands of tons of Australian sugar to be sold to oversea competitors at £11 per ton f.o.b. Australian ports, or approximately £20 per ton under the price at which jam manufacturers are buying their sugar, viz., £30/6/8 per ton. The present-day New Zealand price for cane sugar is £21 per ton.

"Compared with the year ended 1912, when sugar cost £18 per ton, and the period 1925-6, the figures indicate that the per capita consumption of jam receded from 18lb. to 11lb. Our contention is that if sugar were supplied at a lower rate for manufacturing purposes generally we would be enabled to circulate the finished article at a more attractive figure, resulting in increased consumption and the use of a much larger tonnage of locally-grown fruit."

CANNED FRUIT PUBLICITY.

Canned fruit receives organised publicity in U.S.A.

Recently, through the courtesy of Mr. Thomas, of the Victorian Railways Department, we inspected a copy of the Annual Canning edition of the San Francisco "Chronicle," one of the leading dailies, in the February 24 issue of which eight full pages are devoted to the subject of canning. Details are given of the programme of the California Canners' League, and much information on canned foods is given in the articles, many of which are illustrated.

One big heading reads, "Conference of Canners Reveal Importance of Industry to the State,"

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the last three years. Last year the loss on the cannery was about £48,000, of which £28,000 is represented by interest.

The question of leasing the cannery has been taken up between a committee of settlers and the Minister for Agriculture in N.S.W. Representative groups of settlers in the several sections of the M.I.A. have the matter

Apples for Export.

Varieties—Grafting—Oiled Wraps—Nomenclature—Regular Bearing—
Thinning and Manuring—Mildew Control—Color Grading—Cases—
Printed Wraps.

Interesting Comments from New Zealand.

(By L. C. Tonkin, Otago, N.Z.)

IN the recently published "Fruit World Annual," an article by Mr. H. G. Colombie reviews from the point of view of an observant outsider (the term "outsider" may not be quite appropriate: but he certainly doesn't clap the telescope to the blind eye) the fruit conditions of Australia.

He points out some defects in the Apple export business under two headings (1) "general," meaning matters that united effort of growers can alter, and (2) "the particular"—able to be remedied by the grower individually.

It is my intention to discuss the "particular" matters Mr. Colombie has pointed out, from the viewpoint of one who has had an annual export of the last four years of ten thousand cases—which means under our New Zealand Government regulations the continual striving to grow clean fruit of suitable sizes.

"Far Too Many Varieties."—The commercial grower of to-day knows this quite well; but to correct the matter means extensive pulling out of trees or extensive grafting. This grafting on a large scale is not such a big task as it looks at first sight. We cut down in the spring of 1928 six hundred 20-year-old Spitzenberg and re-grafted Cox's Orange on them. The following details may assist growers contemplating grafting on a large scale:—

During winter a supply of grafting wood is retained at pruning time, and it is surprising the amount of prunings needed to give scions to do trees averaging 10 to 12 grafts per tree: so it is advisable to retain ample prunings to avoid any shortage (which would be serious) in the spring.

During late winter, an axeman can go around and lop off the big branches about a foot above where the saw will later be used. Most of the tree timber can then be carted off.

We tie the graftings with raffia (as has been done for centuries), but a later method is to use thin rubber bands, supplied by a tyre company—which bands are quite cheap and effective. Wax, fat and resin can all be obtained before grafting commences, and to melt up a mixture in two four-gallon tins over a small electric heater is easy. The tin can be cut away when the mixture has hardened

and the four-gallon block broken up and the lumps used as required at the grafting time. We fixed a small stove on a wheelbarrow, and find this quite a good way to convey the melted grafting-wax from tree to tree.

In making the cuts on the original tree to take the grafts, we found the many cuts became tiring on the hands, and we now give back of the knife a blow with a light hammer (a hammer as supplied with a new motor-car, generally of no use whatever, comes in handy), a good straight cut being made.

This information is usually not found in technical articles on grafting, but it certainly takes the graft out of grafting.

Perhaps there are other young men who imagine that grafting is a science known only to a few older men—the formulae being handed down through the years like a secret beer-making recipe. There are few more interesting sights to a grower interested in his work than the first few cases picked from a re-grafted tree.

When considering what varieties to graft, one thing to be considered in commercial orchards is to have a reasonable quantity of trees of each variety.

For instance, where we ourselves had fifteen varieties, ranging from one thousand trees of each variety down to three hundred, we now aim for ten varieties of one thousand each.

So in a smaller orchard. Personally, we believe that the elimination of varieties will gradually come about and it will permit bigger lines of a favorite variety to be exported: which will be one way of competing with the "carloads" of American Apples which landed in England in this 1929 season, and which will land in future years in still larger quantities, owing to the still more extensive use of Apple preserving methods, as the use of oiled wraps and such systems as the Brogdex method of wax-covering the fruit.

Nomenclature.—We in New Zealand have little trouble with this, as "Munroes" are Dunn's and "Democrats" are Tasma's. If growers in Australia can pick or choose the names used for these two varieties, might I convey the suggestion from our little islands to your big continent that you adopt the names Dunn's,

Tasma, and London Pippin? It would be a nice compliment to a competitor and business-like as well. Imagine the disgust of a German buyer discarding a line of Australian Munroes because he preferred the look of the N.Z. variety Dunn's—there is no doubt that quite a few of those long German words (that look so impressive and suggestive in the German print) are used.

Annual Production.—This is undoubtedly a drawback to regular trade. Evidently climatic conditions are a great cause of light crops, but let us endeavor to assist Nature by more shelter belts and more bees.

New Zealand exported one million cases in 1928, and will not be so very far off that total again this year!

Each individual grower can assist to bring about a more regular Antipodean export crop of Apples by more thinning and manuring. After several years of both methods, we are finding that

regular manuring

is gradually eliminating a good deal of the thinning, with its attendant labor costs. In a lighter year—as this 1929 undoubtedly is—we were allowed to send a larger size of Apple away.

Again in a very heavy year, if each grower graded to a slightly higher standard, then the price would be better for all. Mildew control is an important factor in regular crops, as clean lateral buds give a certain amount of fruit in the off years. By the use of wettable sulphurs, mildew can be controlled, permitting a plentiful supply of mildew-free buds.

Manures.—There has not been much information available to growers in our hemisphere, and American information is of not much value, as they rely on a cover crop of lucerne in conjunction with applications of nitrate of soda. We have to make our own manurial experiments, and, being in an agricultural country, are apt to be led away to much advertised farm manures that are unsuitable to our orchards: but, on the other hand, because there is a growing tendency of the farming community towards the use of manure, eventually the fruit-growers will benefit in the lowering of prices.

Color Grading.—While we in New Zealand have graded for color for several years, it is only during the last few seasons (coinciding with the dividing of the extra fancy, fancy and good grade into a workable standard), that we have really entered into a high class of grading. While color grading inflicts hardships on strong-growing orchards which usually have not the red color of the lighter lands, color grading

Undoubtedly spurs a grower

on to grow better fruit, to manure for color, to control black spot and codlin, to be careful of mildew rust, to thin to get well-formed Apples, etc.

In the green varieties as Newtown, Dunn's, and Cleopatra, we grade to three shades of yellow or green, and where once we thought this impossible, we can now train casual labor to do so as well. This green variety grading makes us pick over a tree two or three times, with the result that the fruit is picked at a more definite stage of maturity than was the case when a tree was wholly picked in one operation.

Cases.—We will not touch upon this question other than to say that even with the Canadian standard case the use of lining paper is advisable. We fancy that woodwool, used top and bottom, together with the use of box-liners, would be a further improvement, and equal to the new American practice of corrugated cardboard around the sides, top, and bottom. Why the Americans do not use woodwool is not clear—perhaps (1) with good packing it is not necessary, although the human element in the form of a packer enters into American sheds just as it does ours, or (2) the use of woodwool would result in great untidiness in a large and busy packing shed.

Printed Wraps.—The use of these (thanks to wonderfully progressive American paper manufacturers) is becoming common out here, and the time is arriving when it will come a matter for the individual when the fine point has to be decided whether red printing on lemon-colored paper is not more attractive than mauve printing on lemon paper. Both are better than pale blue, which seems the limit of attainment with some brands.

Conclusion.—As a New Zealander, compelled to export in Canadian standard cases, both ends brightly labelled, containing color graded fruit properly sized under a number-count system—it is something like the cheekiness of a common sparrow to act as a medium between Mr. H. G. Colombie's observations and the Australian grower. We as fellow-growers appreciate his opinions, and a good shake-up undoubtedly stirs even the most cock-sure, independent-minded (yet progressive and intelligent) grower,

Dried Fruit Trade**Fumigation and Special Containers.**

One of the greatest problems connected with the dried fruit trade is the presence of the dried fruit grub.

Both in the Australian and the export trade the same trouble—grubs emerge as soon as the temperature is high enough. Dried fruits entering England are fumigated. Nevertheless, the trouble persists.



Interior view of Hydro Vacuum Company's Works at Port Melbourne, Vic. Dried fruit, grain, etc., are sterilised in these cylinders.

Various methods are being tried to destroy the grub and the egg. One of the most promising of these methods is the system of hydro-vacuum fumigation. By this means the fruit is sterilised—the eggs being destroyed—and if the fruit could be sent in sealed containers the grub trouble would be eliminated.

The manager of the Hydro-Vacuum Fumigation Co., Mr. F. Morgan, speaks very highly of a new waterproof container which is now being tested. It is made of a special composition, is light, cheaply constructed, and can be made in all sizes to contain one lb. or 56 lbs. It is stated to be superior to tin and much more serviceable.

Experimental lots of sterilised dried fruits have been sent to China in these containers, and the results will be published as soon as possible.

If it can be demonstrated that sterilised dried fruits can be safely

sent in these handsome, effective containers to the United Kingdom, China, or other places, a great service will have been performed for the Australian dried fruits industry.

On June 20 a demonstration was held at the works of the Hydro-Vacuum Co. at Port Melbourne. Four specimen cases of selected dried fruits were fumigated, and are being sent by the Department of Markets and Transport to Australia House for publicity purposes.

In each of the four cases a design is worked out in fruit. One of these is a map of Australia. The Pacific and Indian oceans are all Currants; the interior Australia is made up of Sultanias.

In the other cases there are ornate designs using first quality Currants, Lexias, and Sultanias: the hot dip Sultanias were noticeable by their dark amber color.

The fruit was put up by the Aurora Packing Co. at Mildura.

DRIED FRUIT SALES.

Advices cabled to the Commonwealth Dried Fruit Export Board by the London Agency record that sales of Australian dried fruit in Great Britain for the week ending June 6 reached a total of 962 tons, representing in value \$45,980.

As anticipated, new season's Currants sold well, 550 tons making an average of £46/14/9 per ton. 383 tons new season's Sultanas were sold, averaging £50/6/6. The balance included 19 tons old Sultanas at £31/16/9, and 10 tons new Lexias at £42.

The trade in dried fruits of Great Britain is partly seasonal, but to dispose of our export surplus of dried fruits from 800 to 1,000 tons should be sold per week.

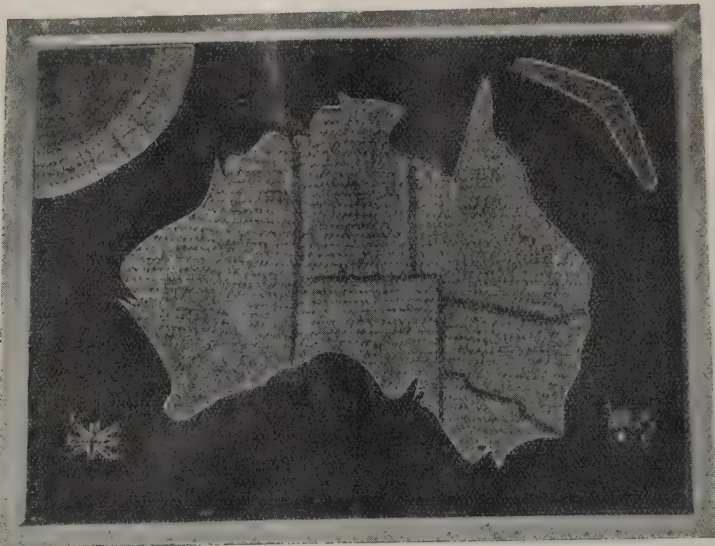
The political situation was being watched with very great interest, and the greatest importance attached to

REPORT TO JUNE 13.

The London Agency of the Dried Fruit Export Board report that sales of Australian dried fruits of the value of £30,457 were recorded during the week ending June 13, in respect of sales totalling 650 tons.

Of new season's Sultanas 344 tons were taken at an average price of £49, and of the small balance of old Sultanas 24 tons at £31/2/9. Of new season's Currants, 263 tons were cleared at an average price of £46/7/9.

Total shipments of this season's fruit to Great Britain to date comprise 30,021 tons, as compared with 5,290 tons at corresponding date of last year.



Dried Fruit design for publicity at Australia House, London.

Shipments to Great Britain to June 6 total 26,777 tons, made up of 8,340 tons Currants, 17,450 tons Sultanas, and 987 tons Lexias. This is in marked contrast to the exports to the same date in 1928, when 4,040 tons in all had been despatched, and reflects the high tonnage harvested this year. Total shipments in 1928 season were 13,878 tons, comprising 586 tons Currants, 11,089 tons Sultanas, and 2,203 tons Lexias. It is therefore interesting to note that from early arrivals of the 1929 fruits, 2,193 tons Currants have already been disposed of. Exports of Currants to Great Britain for the present season are approaching completion. It is anticipated that the good quality of the 1929 crop Currants will ensure progressive and successful realisation before the advent of the Greek harvest. The normal consumption of Currants in Great Britain approaches an average of 1,000 tons weekly.

The Chairman of the Board (Mr. Thomas), commenting on the foregoing figures, attached great importance to the progress being made in selling the new season's Currants in view of the comparatively heavy financing involved in the handling of a record crop in Australia.

the maintenance of the preference granted to Empire grown fruit, and especially to Sultanas. The British tariff admits Australian and South African dried fruits free of duty, while imposing duty on Greek Currants of £2 per ton and on Sultanas and Raisins other than Empire origin of £7 per ton.

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(We are not responsible for opinions expressed by our correspondents. We cannot promise to reply to inquiries by letter. The name and address of the writer must always be supplied, but if desired, will not be published.)

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CODLIN MOTH CONTROL.

Mr. S. R. Bushnell, managing director of Jaques Pty. Ltd., Burnley, Vic. (manufacturers of the "Elephant" brand sprays), recently returned from a visit to the fruitgrowing centres of the several States.

In a letter to the editor, Mr. Bushnell states his experiences regarding codlin moth as follows:—

The past season was one of the worst ever experienced for codlin moth. This I attribute to the following various causes:—

1. The warm, dry season, resulting in an almost continuous brood of codlin moth.

2. Owing to the very heavy crop the previous season, a tremendous lot of fruit fell, and was not picked up, but was allowed to remain on the ground. The grub from this fruit found its way eventually into the bark of the trees, starting a breeding ground for the next season.

3. As the prospects were for only a very light crop, a number of growers either sprayed carelessly, or not at all, evidently thinking it was not worth while, thereby allowing the codlin to obtain a very strong hold, and were unable to check them with later sprayings.

The 1st cause requires the grower to maintain a careful watch over his crop, and to keep his fruit well sprayed.

The 2nd can be considerably lessened if the grower will clean off all old bark from his trees and then bandage them. In Southern Tasmania, where the codlin is less active than in any State on the mainland, the growers bandage their trees with excellent results. It is essential to destroy the grubs collected under the bandages at least every two weeks.

As regards the 3rd cause, it is just as necessary to apply the calyx spray for a very light crop, and to apply it thoroughly, as it remains a fact that although there may be only a few Apples on the trees, there are just as many grubs about, as in the year when a heavy crop is experienced. If action is not taken to destroy the grub a bigger brood is hatched for the next season.

As regards arsenate of lead spray, I found in all States the outstanding success of lead paste over lead powder. This difference in results is not so noticeable in a heavy crop, as the grower is to a certain extent indifferent about grubby fruit, but in a light crop, when every Apple counts, the lead paste proves its superiority over lead powder.

I strongly recommend growers to use arsenate of lead paste in preference to arsenate of lead powder this coming season.

[Opinions of other readers are invited on this subject.—Ed., "F.W."]

BETTER FRUIT PACKING.

Fruit Retailers Support New Methods.

Sale of Fruit by Number Desired.

To the Editor of the "Fruit World."

Sir,—At the monthly meeting of the Executive of the above Association, great appreciation was expressed by members, of your efforts to improve the packing and grading of fruit. We feel that the many diagrams appear-

ing in your journal at various times of the correct method to pack fruit must be of inestimable value, not only to the grower, but to all those engaged in the distribution and consumption of fruit also.

As regards grading, the members of our Association would welcome the same system applied to Apples, Pears, Quinces, etc., as Oranges—viz., evenness as regards size, quality, and even the number of fruit contained in cases, marked thereon; this would entail very little trouble to growers,

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Correspondence Invited.

H. JONES & CO. LTD.,
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and no doubt would greatly enhance the value of the contents; retailers would then be in a position to sell same by the dozen, instead of by weight as at present, which no doubt would be greatly appreciated by the public. Many retailers would sell such fruit now by numbers if they could procure their fruit, graded better.

Yours, etc.,

Edw. W. Thompson,

Secretary, Melbourne and Metropolitan Fruit Retailers' Association.
June 8, 1929.

The Citrus Grower

News and Notes.

THE CITRUS POSITION.

V.C.C.A. Replies to "Seccateur."

The Editor, "Fruit World."

Sir,—Growers will doubtless appreciate the desire of "Seccateur" to see the organisation of citrus-growers placed on a more satisfactory footing. No organisation can be said to have reached such a state of efficiency as to be incapable of improvement, least of all a Co-operative Association, in the running of which all have an equal say. But growers will wonder why "Seccateur" found it necessary to buttress up what might have been a good constructive piece of criticism with somewhat reckless statements.

"Coming to the Victorian crop," said "Seccateur," "it is not to be denied that during last season an alarmingly increased production of fruit was handled outside the V.C.C.A. organisation." He produced no figures to support this amazing contention, but calmly went on to speculate why "the measure of control accorded it by growers has definitely diminished," etc. I am sure "Seccateur" will be pleased to learn that although there was an increased crop of Victorian and border fruit to the extent of 75,000 cases, the V.C.C.A. figures showed that it handled on the Melbourne market an increase of 91,000 cases, plus 12,000 cases from non-members. Thus, there was a bigger increase in the fruit the Association handled than there was in the crop, which definitely refutes any suggestion that the Association is slipping back.

Later, "Seccateur" pointed to the South Australian pack, which, he said, "is fully controlled by the 95 per cent. organisation of the Murray River Citrus Association," and deplored the fact that the Victorian Association had not "achieved something of South Australia's success in getting its growers together." The Murray River Association is in control in one section of the State only, and claims 90 per cent. control in that particular area. South Australia's total citrus production on the last available official figures was 412,633 bushels, and of this total, the Murray River areas were responsible for only about one half, the bulk of which comes to Melbourne. The remainder of the S.A. crop came from Salisbury Plains, Torrens Valley and other areas. There

is no Central Citrus Association in South Australia, and there is no effective control regarding supplies for the Adelaide market. But the Murray River Association and the larger packers of Salisbury Plains and Torrens Valley fruit meet now and again to arrange prices in accordance with supplies available and advise growers when the market is glutted. In Victoria the V.C.C.A. covers nearly all the citrus-growing areas. Can it be

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fairly said in these circumstances that "South Australia alone can be said to be efficiently organised?"

Of course, "Seccateur" must know the position in South Australia, and I do not, for a moment, say he has deliberately intended to be misleading, but he will agree that any reader unacquainted with the facts could come to no other conclusion from his article but that organisation in South Australia was pointed to as an example for Victoria to follow.

To my certain knowledge, leading South Australian growers have pointed to Victoria as an example for South Australia to follow. If the V.C.C.A. were only representative of a section of growers like the Murray growers of South Australia or the Central Citrus Association of New South Wales, it could not control the Melbourne market, which it does, not only for its own growers, but for N.S.W. and S.A. as well. It is a fact that the Murray River Association is the controlling factor in the fruit sent to the Melbourne market from South Australia, but to hold it up as an example of State-wide organisation and compare it with the V.C.C.A. is a very different thing.

"Seccateur" offers as a remedy that a Director be appointed from each district of the V.C.C.A. That would mean a Board composed of 22 Directors. This proposition was put up to districts during an organising tour last year, and rejected at every meeting as being too unwieldy and expensive. Even a modified proposal to group districts in such a way as to increase the Directors to five, put forward at the recent Conference, received the votes of only the mover and seconder. The Board to-day is composed of four Directors.

There are many other points to which I might reply, but I feel I have trespassed sufficiently on your space. Every grower will agree with "Seccateur" that the future lies "in the creation of an atmosphere of mutual confidence."

Yours faithfully,

Victorian Central Citrus Assn. Pty.
Ltd.

B. S. B. Cook,
Manager and Secretary.

SHEPPARTON GROWERS.

Loyalty to V.C.C.A., But Opposed to
Compulsion.

Equipping the Packing Shed.

At a meeting of fruitgrowers held at Shepparton at the end of May, Mr. A. Lees, President of the Shepparton branch, Citrus Growers' Association, counselled loyalty to the V.C.C.A. However, he was opposed to the compulsory levy proposals of the recent Central Citrus Conference.

The marketing of citrus fruit through district packing sheds was declared to be essential.

The meeting decided to adopt the suggestion of Mr. L. J. Michell, of the Fresh Fruits Packing Co., and put a considerable proportion of their crop through the packing shed, and take additional shares to equip the place with modern plant.

SALE OF ORANGES.

COMMENTING on the recent reductions in the wholesale price of new season's Navel Oranges, early in June, Mr. J. M. Ward, Superintendent of Horticulture, said that the indications are that the Victorian citrus crop, this season, will be in excess of that of last year, when approximately 585,000 bushels of citrus fruits were harvested in Victoria. During May the earlier Victorian districts began despatches of new season's navels, both Thompson's Improved and Washington varieties, and by the end of May there were fairly large quantities of navels on the market from the New South Wales irrigation areas and from South Australia.

The Orange crop was not marketed in Melbourne on a State basis, and the surplus production of sister States had to be sold in conjunction with the Victorian crop.

Citrus growers generally had had a bad season last year owing to adverse seasonal conditions and depressed markets, and this year had looked forward to a better selling season, particularly as the Oranges in the majority of the districts were of a more marketable size this year, and the successful marketing of the main Victorian crop, continued Mr. Ward, depended on the ready sale of the early supplies, and the price at which navel Oranges from districts like Mildura and Tresco were available to the trade should enable supplies to be sold readily.

According to market reports (28/5/29), the best standard Orange packs from Mildura and Merbein were selling at 14/- a case for an average size of 96 Oranges to the case, and after packing and marketing costs had been deducted the grower would receive approximately 9/6, out of which production costs would have to be met. This price, which was, of course, only for the better packs, was one that in the circumstances gave the grower a reasonable return and permitted the sale of Oranges to the public at a reasonable price.

Warning to Retailers.

Mr. Ward added that apparently the name "Renmark" or "Mildura" was regarded by a section of the retail trade and of the public as a type name for certain varieties of Oranges. In actual practice Oranges that had not been grown within two or three hundred miles of either Mildura or Renmark were displayed for sale as "Best Renmarks" or "Best Milduras." Such a practice was contrary to the regulations governing the sale of

Oranges. Under the regulations the retailer who displays for sale Oranges under a false description as to the locality of production is liable to prosecution, and action will, in future, be taken against offenders.

HANDLING LEMONS.

Curing Demonstration on Large Scale.

A PROPOSAL is on foot in the matter of handling the Lemon crop, which deserves the unstinted support of growers. For a long time past the Victorian Government Citriculturist, Mr. S. A. Cock,

By means of addresses and Departmental literature, Mr. Cock has disclosed the fact that the secret of the superiority of the Italian product is

no secret at all,

but rather a common-sense method of handling the fruit without recourse to processing or equipment of any kind. Careful handling associated with picking at the right time are the essentials. If only a proportion of our growers would take the business seriously the question of placing an embargo on the Italian importation would never arise.

Victorian Lemons "cured" by the Italian method are fully equal to the finest imported fruit, and, moreover, has the same desirable keeping qualities.

In order to demonstrate the possibilities of retaining the case market for growers, it is proposed that the Division of Horticulture take charge of a block consignment of Lemons from Victorian districts and handle it in their own stores without recourse to cold storage. One thousand cases is suggested, half of which would be picked and forwarded by growers, and the other half picked and forwarded under the direct supervision of officers of the Department.

Mr. A. Schwennessen and Mr. B. S. B. Cook, of the V.C.C.A., have been in conference with the Superintendent of Horticulture (Mr. J. M. Ward) and the Citriculturist (Mr. S. A. Cock) to this end, and it is hoped that through the V.C.C.A. the early completion of these arrangements will be secured to enable the experiment to be carried to a successful conclusion.

NEW ZEALAND.

Annual Conference of the N.Z. Fruitgrowers' Federation.

The thirteenth annual Conference of the New Zealand Fruitgrowers' Federation Ltd. will be held at Wellington on July 3.

Provincial Conferences have already been held at Otago, Canterbury, Marlborough, Nelson, Auckland and Hawkes Bay.

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had preached the gospel of Lemon curing with a view to securing an assured outlet for the fruit at remunerative prices, and case lots during the summer months when the factories have ceased buying for the season. Year after year we have seen the imported fruit from Italy brought here to fill the gap created by our own growers and sold at prices which excite envy.

-LEMONS-

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Queensland

Spraying - Planting - Custard Apples.

WINTER appearances, so far as it is evidenced in a semi-tropical climate, is apparent throughout the southern part of the State. Growth is very slow or dormant, and the general cleaning up of orchards in progress.

Indian Wax Scale.

Citrus growers in many districts are pestered with the Indian wax scale, which, until comparatively recent years was kept in subjection by a minute ladybird, which penetrated the wax covering and destroyed its contents. This parasite is now seldom noted. Spraying, which has of necessity been much more general, is possibly responsible to some extent for its absence, but not so much as credit, for there is an abundance of its host upon very numerous trees which have not been subject to any treatment. This applies particularly to Mango trees, some varieties of which are most susceptible to wax scale, whilst others are practically immune.

Amongst citrus it is most partial to Mandarins of the Emperor type, though other varieties are not immune. Being a most accommodating pest, bestowing its attention to very many garden plants, and even ferns, its control is not readily attained.

Various spraying formulas are advocated against it, with a recommendation to apply when the young scale are active, but as their season of activity extends over almost the whole year, this is a rather large order. Various tests have been conducted, and as a result the plain soda spray (1 lb. to 3 gallons of water), or resin wash added to oil sprays are recommended. Cyaniding is not nearly so efficacious, and when an application is made, to be thoroughly efficacious, repetition at an interval of four to

ten weeks (according to the time of year) are necessary.

The planting of citrus trees will not be extensive: 50,000 young trees will about meet requirements. It is noted that amongst some of the oldest fruit districts that very many of the trees have almost

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Representatives—

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Company Ltd., Melb., Vic., Australia.
Murdoch Bros., and A. J. Walshe &
Co., Hobart, Tasmania.

reached their allotted span of existence, and further planting, particularly in warmer situations, is a reasonable proposition.

The Custard Apple crop, though light, has not commanded above average prices—the competition of other fruits, and a fairly general practice in earlier years of marketing most immature fruit, each exercise influence against this esteemed fruit.

Though not adapted for long distance transport, if taken from the tree at the right stage, the fruit will mature in a week, and having no keeping quality, must be used within 24 hours of ripening, otherwise the quality deteriorates. Cool temperature in transport would materially affect its being placed on the southern markets in a most satisfactory condition. Under existing conditions of marketing in Sydney, there is no possibility of this most excellent fruit becoming popular. Instances recently noted, point unmistakably to the fact. Fruit sold in half-bushel cases or trays in the wholesale market, at the rate of 9d. each (for large specimens were offered to the public at 3/- to 4/- each in the retail shops). In this State we have a price fixing commissioner, possessing the necessary authority to deal with business of this kind, under what is correctly titled the Profiteering Prevention Act.

Fruit marketing control, and other features incidental to the industry, were (and probably will continue to be) contentious subjects amongst our politicians. Legislation passed by the late Government was condemned by the then Opposition. Will the attitude of the latter, now that the order has been reversed, be consistent with their previous statements?

The rural workers' award has been cancelled—except in the sugar industry—why the latter has not been included and the price of sugar correspondingly reduced, can only be conjectured—as no explanation is offered—possibly on account of the reasons being so obvious.

Do not run any Financial Risk with your Fruit
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Tasmania: State Fruit Advisory Board.
New South Wales: N.S.W. Central Citrus Assn. Ltd.
Batlow Packing House Co-op. Soc. Ltd.

PRUNING FRUIT TREES.

THE main idea in pruning is to develop a strong, well-shaped frame. A large crop of fruit not only draws upon the vitality of the tree, point out officers of the Fruit Branch of the N.S.W. Department of Agriculture, but also tests the strength of its limbs, and results may be disastrous to the tree if the limbs are allowed to grow excessively or if it is allowed to bear a crop of fruit before the limbs have become sturdy enough to carry the burden. No desire for early gain should ever tempt the orchardist to allow the tree to carry and to mature a heavy crop at the expense of the tree's well-being.

It is difficult, if not impossible, to lay down any general rules with regard to pruning beyond this: that the pruner must study the chief characteristics of each tree of each kind of fruit. Old Apples and Pears bear most of the fruit on fruit spurs, Peaches bear their fruit on last year's growth. Plainly the pruner must consider these and other distinguishing characteristics and ply his secateurs accordingly. Old Apple and Pear trees sometimes develop crowded spurs and thinning out is essential.

The pruner must also consider factors which influence the growth and development of the tree. These factors include the mechanical condition and chemical composition of the soil, the character of the stock, location, climatic influences, manuring, cultivation and spraying, all of

which play their parts in tree development, and every one of these factors must be considered by the judicious pruner. Each tree has its own individuality. The pruner's aims should be tree symmetry, tree health and tree wealth, and he must prune accordingly.

Good pruning lends itself to the economical working of an orchard in all its branches—cultivation, spray-

ing, picking. It aids in the production of good bearing wood and in improving the appearance of the fruit in-so-far, at least, as size and color are concerned—both factors of some importance in the marketing of fruit. It helps to secure regular cropping and to maintain the tree in a healthy condition; it opens up the main axis of the tree to the influence of the sun's warmth and light.

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The Now World Famous Synthetic Fertiliser

Is the BEST All Round Manure for the Fruitgrower

1. **CHEAPEST**—Not per ton, but per content of Pure Plant Food.
2. **COMPLETE**—Contains all three plant foods.
3. **WELL-BALANCED**—The ratio of the three plant foods is such they supply the trees' most urgent requirements during Blossoming.
4. **NITROGEN**—A most essential Plant Food for Fruit Trees, is combined in such a way that its **maximum** effect may be obtained.
5. **READILY AVAILABLE**—May be applied just prior to Blossoming, and will act immediately and continuously.
6. **HIGH CONCENTRATION**—It contains more than twice as much Plant Food as any other complete fertiliser mixture. Therefore there is **less than half the Freight, Cartage and Handling** necessary.

Many Fruitgrowers in Victoria Now Testify to its Worth!

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Analysis—

Nitrogen as Nitrate, 4.5 %..	} 16 %
" as Ammonia, 11.5%	
Phosphoric Acid, all soluble..	16.5%
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Orchard Problems Discussed

Pruning to Regulate the Crops; Pollination; Spraying;
Parasite for Codlin Moth Needed.

Experiment Orchard for Gippsland Requested.

A MEETING of great interest to fruitgrowers was held at Pakenham, on May 30. Called by the Executive of the Gippsland Fruit Marketing Association to discuss current problems of pruning and spraying, it drew an audience from growers as far away as Pomonal, Moorooduc, Drouin, Narre Warren and Doncaster. In fact, the visitors took an animated part in the discussion, and added greatly to the interest of the meeting.

Mr. J. J. Ahern took the chair and asked for a friendly and informal meeting. Orchardists had much to learn from one another, and by sharing each other's experiences. The day had gone when men hoarded up knowledge for private use.

Mr. T. H. Grant said that he had come to listen and to learn. He had been at the job for sixty years, and he realised how much he had still to learn. It seemed to him that we got better fruit and more regular crops sixty years ago than we did today. We drowned our trees with caustic liquids, plastered our fruit with lead, and poisoned our soil in our efforts to cope with the pests and diseases which now infested our orchards. Alternate cropping was another evil. He believed that we should feed our trees in January and February, when the next season's buds were being produced.

Mr. F. Thomas thought that alternate cropping was one of our worst troubles to-day. The plague of thrips in the spring of 1926 had given all varieties in all districts a complete rest, and it looked as if we must face a succession of very heavy, and of very light crops for some time to come. He invited orchardists of experience to tell how they intended to prune their trees this winter. Did they think it wise to cut the trees hard now in order to regulate the crop expected in 1930, and at the same time to force out laterals that could be expected to produce a fair crop in 1931?

Mr. Tainton, an orchardist of fifty years' experience near Doncaster, believed in thinning out the growths. If you cut too hard you cut out your profits, if you allowed your limbs to run on, the fruit swayed about in the wind, and there were heavy losses with arsenate of lead. He quoted

from windfalls. He advised growers to shorten their trees at the top. "Don't be afraid to cut your trees back," he said. "You can always renew their life in that way."

Mr. Donald Grant (Drouin), said that if we pruned intelligently we could get fairly regular crops. He strongly approved of thinning out, and thus getting rid of inferior fruit once for all. The aim of pruning was to get both fruit and young wood in the trees at the same time. If we had too heavy a crop, we would not get the young wood. It would assist this if we would manure.

Mr. Griffith (Two Bays), said that by attention to pruning, manuring and cross-pollenising we could get regular crops. He would like to stress the importance of pollenising. Seventy per cent. of his trees had good buds last spring, but owing to the lack of cross pollenising, they did not set. He thought we ought not to depend on any one variety. Experience showed that no one variety would blossom regularly every year.

Mr. S. Brown had an ideal in pruning. He wanted the tree to carry its load. To this end he had pruned severely, but had not always been successful in getting crops. He urged the need for a Government Experimental Orchard in Gippsland.

Mr. H. G. Colombie referred to the evil of irregular cropping from the standpoint of the overseas trade. We built up a name for our goods in one year, and then lost the fruits of it by our failure to keep up supplies. Some growers thought that we should allow only one half of our orchards to bear in any one year, but he could not think such a policy sound economically.

The discussion then turned on the problem of controlling the codlin moth. Mr. Brown stressed the importance of picking up all windfalls, and Mr. R. Nash, Bunyip, spoke strongly in favor of bandaging the trees. If they could not be attended to during the rush of the picking season, they might be put on in March and examined during the winter. He was sure from his own experience that it would pay to do this.

Mr. T. H. Grant spoke of the splendid results obtained in America and last season in Victoria by the

use of summer oil sprays combined figures showing that the percentage of fruit rejected for grubs fell to 2.9 per cent., and even to .4 per cent., when it had been treated by two or three applications of the combined spray.

After further discussion, Mr. Griffith moved: "That this meeting urges upon the Federal Government the necessity of using the genius of Dr. Tillyard to find a parasite of the codlin moth in order to control the pest." This was seconded by Mr. Gough and carried unanimously.

It was decided to hold another meeting in a month's time in order to discuss the problem of manuring, and to consider the establishment of a Government Experimental Orchard in Gippsland.

SPRAYING AND MANURING.

Harcourt.—There is not much winter spraying done in this district. If there is a marked infestation of woolly aphis, mussel scale, or red spider, a delayed dormant spray of red or crude oil (1 in 20), may be given, but these pests can usually be coped with by the lime sulphur spray, in the pink stage, for black spot. In a favorable season, this spray can also be dispensed with, though without it there is a risk of black spot right through the summer.

Green Manure.—Vegetative growth of all kinds is encouraged during the late summer and autumn, this forms a good mass to plough in during the spring. When a special crop is sown, field peas are used, one bushel to the acre with 2 to 3 cwt. super being broadcast.

Super is used more extensively than any other manure. Its use encourages the growth of trefoil, one of the best leguminous plants. Nitrogenous manures are used to a limited extent.

There has been considerable planting going on during the last few years, it is estimated that our present production will be doubled in ten years.—Jas. H. Lang.

NEWS IN BRIEF.

Trays are deemed preferable for shipping tender Pears to England. Wood wool is also advised. The flat bushel is suitable for hardier Pears (Howell's, etc.),

The Selection and Planting of Fruit Trees.

By J. M. Ward, Superintendent of Horticulture, Victoria.

THE PLANTING SEASON is now with us, and those who desire to make further plantings of fruit trees have ordered, or are about to place their orders, for their trees.

The utmost care is required in the selection of trees, otherwise some mediocre trees are bound to be included in the orchard. Even with great care in the selection, there are always a few "dud" trees planted in almost every orchard.

trees to start with is money well spent.

Any observant person walking through an orchard during the fruit season can here and there detect trees that are not standing up to their job. That is, they are loafers, they are not doing their fair share of the work they are supposed to be performing; or, on the other hand, they may be carrying a medium to heavy crop of unsuitable type of fruit.

This is particularly noticeable in the case of certain

Navel Orange trees,

many of them produce low quality fruit—a fruit that the public does not want. I have said on numerous occasions, that if a fruit tree does not stand up to its job and produce a good average crop of quality fruit each year, it becomes a liability and not an asset. No grower—although he may not think of it—can afford to keep a non-paying boarder in his orchard. The failure of a few trees here and there in the orchard to produce good fruit is a means to reducing the output of the block, and at the same time heaps up the cost of production.

It should never be forgotten that these

non-paying boarder

trees cost equally as much to keep as the trees producing good crops of quality fruit. One should view each tree as a piece of machinery, and if every tree plays its part in production, better crops per acre are produced at no greater cost.

Good crops of quality, however, cannot be produced over a period of years unless quality trees are planted.

As important as this may be, it is, however, worse than useless to plant trees of any kind in soil that is unsuitable. One meets with quite enough trouble in fruit culture without buying it at a very high cost. A number of growers in most of the fruitgrowing districts in Australia, have purchased and cleared land for orcharding purposes; and, having done this have, after years of waiting, discovered to their great cost, that the land so far as its suitability for fruit-growing is concerned, was not worth the price of the fence surrounding it.

On the other hand, it is quite common to see low-quality trees planted

in most suitable soil. The owner realising that he has a really good property, gives it special attention and spares no effort in making his trees yield good crops, but these "ill-bred" or "old-stags" of trees badly let him down. Despair follows, and the owner is forced off his block.

A grower should make a careful examination of his trees upon receipt of them on his block. Any weak or "weedy" trees should be at once discarded. This much at least is in his power, and he should not hesitate in acting.

The selection of the bud from a tree that produces plenty of fruit of the right type is at present out of his power, but by taking a keener interest and co-operating with

Ship Your Oranges, Lemons, Grapes to New Zealand



All consignments for this market will have careful attention and realize highest prices if sent to

The Co-operative Fruitgrowers of Otago Limited, Dunedin

Personal supervision of every consignment.

Cheques posted promptly.

Drop us a Line or Cable "Peachbloom," Dunedin.

The average orchardist, however, does not display sufficient interest in the selection of his trees. I do not merely mean in the choice of varieties, but in the quality of the trees to be planted.

If growers as a whole took a keener interest in this important subject and worked in closer

co-operation with nurserymen,

a move could be made for fruit trees to be graded into various quality grades; the planter would then have only himself to blame if he planted low-grade trees. He would, no doubt, have to pay a higher price for high-grade trees, but they would be worth it, for the initial cost of laying out an orchard is only a minor one when later expenses of upkeep and production are taken into consideration. A few extra pounds judiciously spent in obtaining really good

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— Agents for —

"BLACK LEAF 40"

and all Orchard Requirements

**Melbourne Sydney
Newcastle Hobart
Launceston Devonport**

the nurseryman who propagates and sells the trees even this difficulty can be overcome.

Always remember that fruit trees are commercially planted with a view to producing the maximum amount of marketable fruit at a minimum of labor and cost.

Soils and Climate.

A little while ago, I mentioned the matter of soils. I will now further touch upon it, also on climate.

There are many types of soil in Victoria eminently suited for the production of various kinds of fruit. A soil suitable for the profitable production of fruit over a long period of years must necessarily be of a type that suits the particular kind of trees that one desires to cultivate. All soils are composed of small fragments of rock of various kinds mix-

TREES

Full Range of Varieties All Sturdy Growers

AND all backed by Goodman's 40-year reputation of true-to-label quality trees. Buy from Goodman's, and be sure of best results always. Stocks include numerous varieties in

ALMONDS, APPLES, APRICOTS, CHERRIES, FIGS, NECTARINES, PEACHES, PEARS, PLUMS, PRUNES, JAPANESE PLUMS, QUINCES, JAPANESE PERSIMMONS, ORANGES, LEMONS, CURRANTS, GOOSEBERRIES, VINES, RASPBERRIES, WALNUTS, FILBERTS, SPANISH CHESTNUTS, RHUBARB, STRAWBERRIES, MULBERRIES, ORNAMENTAL TREES, Etc.

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Expert packing assures arrival in perfect condition always.

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(W.MeF.)

ed with varying amounts of decaying organic matter, the fragments coming from the rocks, and the organic matter, from breaking down of animal and vegetable tissues.

In agriculture it is usual to talk of soil and subsoil. Soil is the surface, and subsoil, that beneath the surface. From our point of view, the most important function of soil is to act as a storehouse for moisture for the use of plants. Secondly, a storehouse for plant-foods—the lime, potash, phosphoric acid and other materials are derived from slow decay of soil particles. Besides these, all fertile soils are a home for countless bacteria, which are continually breaking down the organic matter of soils and liberating nitrogen, which is all important to plant growth; and lastly, the soil acts as a mechanical support to the plant per medium of its roots, and thus supported can stand erect.

We know by experience that a soil to be of any use for fruit-growing and other agricultural purposes, must contain certain substances, otherwise a crop would not be produced.

These substances are potash, calcium, magnesium, phosphorus, sul-

phur, iron and nitrogen. If any one of these be absent there is little or no crop. Trees also require oxygen and carbon, which they obtain from the air.

Unless fruit trees are planted in a fairly good soil, disappointment must eventually result. The old idea that "a soil which is of no use for anything is good enough for orcharding," is a wrong one.

As already stated, fruit trees require plant-food, and if this is absent to any extent, it becomes too costly to put there and maintain. It necessarily follows that no matter how good or suitable the soil is, the choosing of it will be in vain unless the climatic conditions are favorable. For instance, it would be foolish to attempt to produce Oranges on a commercial scale in a climate that is naturally cold and frosty; likewise one would not attempt to grow Apples commercially in a climate such as Mildura, which favors the production of Sultanias and citrus fruits. Then again, it is not wise to grow Apples in a locality where the rainfall is too great, as too much black spot (*Venturia inaequalis*) and other fungus diseases will result.

Having taken into consideration the soil and the suitability of the district for the fruit, it is proposed to produce, the next thing is to consider the site, and freedom of the site from spring frosts.

The knowledge of this can be obtained locally far better than I can give it from here.

If the land should lie wet, under-drainage should be considered; at the same time taking into consideration as to whether the cost of draining such land is a profitable proposition, or whether it would pay better to seek another site.

Good Drainage Imperative.

Some of the good things drainage does by the removal of surplus water are:—Deepens the soil, aerates the soil, lengthens the growing season, permits tillage to be done more easily, makes the soil sweeter and sanitary, and permits deep-rooting plants to resist drought better.

In conclusion, I would ask all fruitgrowers to have a look through their orchards to-morrow and pick out the weakly trees that produce small crops, and then think of the weedy young tree about to be planted, and consider what it would look like ten years after planting.

PORT OF MANCHESTER

Extracts from Official Market Reports

(Published weekly by British Minister of Agriculture) willingly forwarded to Growers, Exporters and others on application to address below. These records

PROVE Prices realised for Imported Fruit AT MANCHESTER Challenge Comparison

With results obtainable at any other market, as the following examples indicate:—

	Hull.		Liverpool.		London.		Manchester.	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
	quality.		quality.		quality.		quality.	
18/1/29. Oregon Newtowns (case) ..	15/6	13/6	15/-	13/-	13/6	11/-	17/-	14/-
American Greenings (barrel) ..	35/-	30/-	31/-	26/-	35/-	30/-	36/-	30/-
25/1/29. Oregon Newtowns (case) ..	15/6	13/6	13/6	11/6	14/-	11/-	16/-	14/-
York Imperials (barrel) ..	36/-	29/-	28/-	22/-	30/-	24/-	36/-	34/-
Baldwins (barrel) ..	30/-	26/-	25/6	23/6	30/-	20/-	32/-	28/-
Russets (barrel) ..	34/-	28/-	31/6	28/-	30/-	25/-	35/-	33/-

GROWERS AND EXPORTERS! WHY NOT SHIP DIRECT to the best market as your competitors do?

For information as to charges, selling brokers and importers, etc., apply to:—

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PEARS AND PLUMS IN LONDON.

Victorian Shipments.

Mr. J. W. Pennington, Minister for Agriculture, has received from the Acting Agent-General for Victoria, a report dealing with the consignment of Victorian Pears and Plums discharged from the s.s. “Mooltan” at London on March 22 last. On the whole, the report states, the shipment was a successful one, and shows that, with care in pre-cooling quickly after picking, and also making sure that separate chambers are employed, with proper dunnage, and a low temperature, William Bon Chretien Pears and Plums can be carried successfully.

Although many Pears ripened much too quickly when taken off the ship, others stood up better, and it would seem that greater care must be taken to see that the William Pears are hard and green when picked, without any sign of yellow color, placed in cold store immediately and kept there until thoroughly cooled to 29 to 30 deg. Fahr., and then removed for grading, wrapping and packing, and again placed in cold store until the trucks are ready to take them to Melbourne.

The opinion is expressed that the bushel case is too large, and that trays are preferable with the Pears well bedded in wood wool. In several cases in this consignment the Pears were badly case marked through the lids pressing hard on the Pears.

In this consignment of Pears, the flat bushel case with divisions travelled better than the Australian

bushel case and half bushel cases. With regard to the hardier Pears sent, such as the Howells, the flat bushel case is quite good enough, but such a delicate Pear as the William Bon Chretien, and the Josephines, Beurre Bosc, Beurre Hardy, Doyenne du Comice, and Winter Nelis, require careful packing on trays.

The Plums happened to meet a short market, and, therefore, brought good prices. This fruit was generally of very poor quality, being small and badly graded. Although they brought a fine price for this small quantity, it would be dangerous to send large quantities of this class of fruit, as the price would immediately fall. The Plums had to be sold very quickly, as they ripened and deteriorated very quickly, and the result was that the consignments which were not sold out quickly had many wasty boxes. Only the large sized Plums, packed in trays and properly graded, should be sent to this market.

W.B.C. Pears, picked green, pre-cooled, and sent in special chamber, carried successfully from Victoria to U.K., and brought good prices.

Specialty Investments

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ERY, STOCK or PLANT,
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Any Reasonable Finance
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How Much Per Case Can you afford to pay for a "Lightning" Grader Polisher Brusher and Box Press

These facilities will enable you to obtain an added value of at least 1/- per case for your fruit and perhaps a whole lot more.

1/- on 1,000 cases equals	£50	1/- on 10,000 cases equals	£500
1/- on 2,500 cases equals	£125	1/- on 20,000 cases equals	£1,000
1/- on 5,000 cases equals	£250	1/- on 50,000 cases equals	£2,500

IN ONE SEASON the INCREASED value of your pack more than pays for your equipment.
Order NOW and get the benefit this season.

The Lightning Fruit Grader Co.

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AUSTRALIAN DRIED FRUITS.

Record Pack, Exceeds 62,500 Tons.

The chairman of the Commonwealth Dried Fruits Export Control Board, in an interesting review relating to the 1929 season, reports that during the week ending May 30, the sales of Australian dried fruits recorded with the London agency of the Board, totalled 615 tons, representing a value of approximately £28,850.

Included in this total are 320 tons of new season's Currants, which made the satisfactory average figure of £47/2/6 per ton, and 235 tons new season's Sultanas, for which £50/2/10 was the average price realised. The remainder of the fruit sold included the clearance of the fragmentary balance of the old season's Sultanas, 50 tons, making £31/1/- per ton.

During the last few weeks, in addition to the clearance of the heavy balance of old season's Sultanas, 2,280 tons of new season's dried fruits have been placed, covering 1,643 tons of Currants, approximately 610 tons of Sultanas, and a small quantity of Lexias. The Currants being the first fruit shipped, have had first attention.

Currants.—Mr. Thomas further reports that from the commencement of the shipping season to May 31, 25,020 tons of dried fruits have been shipped to British ports, including 8,000 tons of Currants, 16,100 tons of Sultanas, and 920 tons of Lexias, the bulk of which fruit is now en route to Great Britain. The prospects in regard to the disposal of Currants appear to be favorable, and it is hoped that not only will progressive realisations be made, but that prices which should be satisfactory will be realised.

Sultanas.—The outlook in regard to Sultanas is extremely difficult to forecast, the average price obtained in regard to some 600 tons disposed of from early arrivals being £50, but it is felt that the weight of shipments from Australia this season will prevent anything like that average being realised.

A Record Pack.—The returns as to the fruit forwarded from growers to the packing organisations throughout Australia, disclose that there will be as anticipated, an absolutely record pack, and in all probability the estimate of 62,500 tons of dried fruits may be slightly exceeded.

Canada and N.Z.—Sales effected to the Canadian market to date total 2,805 tons, while New Zealand business, aggregating 1,299 tons, has been placed.

The bulk of these parcels have been shipped in view of the terms of sale to Canada and New Zealand, which provide for cash payments, the off-take to these markets has been satisfactory.

Excellent Quality.—The quality of the new season's crop continues to be generally satisfactory, and the present season, with its record crop, has been noteworthy as being one of the best harvesting periods for many years past.

Parson: "Do you know where little boys go to when they smoke?"
Boy: "Yes; up the alley."

"I hear you've had an addition to your family."

"Yes, two."

"Twins, eh?"

"No—a baby boy and my wife's mother."

PLANTING FRUIT TREES.

A Nurseryman's Opinion.

Fruitgrowers would be wise to carry out the fruit tree planting programme, is the considered opinion of Mr. James W. Lawrey, nurseryman and fruitgrower, of Yarra Glen Vic.

Mr. Lawrey states that the plantings during the last few years have been very light, and that provision must be made for new trees to come on to take the place of older trees which are getting past their best. This would at least be necessary for continued supplies for local markets as well as for the further development of export markets.

The question to be answered by growers as to the general quality of their export fruit, is whether Australian fruit, speaking generally, can effectively compete against the fruit of other parts. It is necessary to have new trees coming on to keep up the required standard rather than that our product should be classed as deteriorating.

"It will be said," continued Mr. Lawrey, "that as a nurseryman I am desirous of pushing the sale of fruit trees,—but I claim that this subject is of much wider importance. I am convinced that we must not only have the quality but the quantity of fruit to maintain and develop our trade and add to the national wealth of Australia."

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Comprehensive review of Australian and New Zealand fruit industry—1/9 post free.

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 Director of Agriculture—Dr. S. S. Cameron.

Horticultural Division.

Superintendent of Horticulture—Mr. J. M. Ward.

Chief Orchard Supervisor—Mr. H. W. Davey.

Senior Fruit Inspector—Mr. E. E. Meeking.

Citriculturist—Mr. S. A. Cock.

Viticulturist—Mr. F. de Castella.

Pomologist and Seed Tester—Mr. E. E. Pescott.

Horticultural Research Officer—Mr. F. M. Read,

M.Agr.Sc.

Science Field Officer—Mr. A. G. Strickland,

B.Agr.Sc.

Fruit Packing Instructor—Mr. B. P. Krone.

Science Branch, Agricultural Division.

Biologist—Vacant.

Government Entomologist—Mr. C. French.

Vegetable Pathologist—Mr. D. B. Adam,

B.Agr.Sc.

Science Field Officer (Entomology)—Mr. G. T.

Levick, B.Agr.Sc.

Assistant Plant Pathologist—Mr. S. Fish,

M.Agr.Sc.

Science Field Officer (Plant Pathology)—Mr. R.

T. M. Pescott, B.Agr.Sc.

Horticultural Division.

Superintendent of Horticulture—Mr. J. M. Ward.

Orchard Supervision Branch—In charge of Mr. H. W. Davey, Chief Orchard Supervisor.

One Senior Orchard Supervisor and 14 Orchard Supervisors, whose duties are to inspect orchards, fruit shops, markets, etc., and give pruning and other demonstrations and lectures, etc., in their allotted districts.

Fruit Inspection Branch.—In charge of Mr. E. E. Meeking, Senior Fruit Inspector.

One Assistant Senior Fruit Inspector and 16 Fruit Inspectors. Inspection of Melbourne markets, shops, barrows and fruit, etc., coming into and going out of Victoria. Also inspectional work under Federal Quarantine and Customs Departments; border inspection.

Citricultural Branch.—In charge of Mr. S. A. Cock, Citriculturist.

Four Citrus Supervisors. Inspection of citrus orchards and general instructional work. Also fumigation of citrus orchards employing a staff of 31 men.

Viticultural Branch.—In charge of Mr. F. de Castella, Viticulturist.

Instructional work in vines; also has charge of Viticultural Experimental Station at Rutherglen, 100 acres of vines and nursery. Staff consists of a Manager and a variable number of men, according to pressure of work.

Packing Instruction.—In charge of Mr. B. P. Krone, Fruit Packing Instructor.

Two assistants. Conducting of classes and general instruction in grading and packing of fruits.

Two McDonald SPRAYS

That
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spell
protection
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orchardists
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C.C.S. Powder

Arsenate of Lead

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is the famous fungicide. It is ready for immediate use. Wonderfully effective in cases of Black Spot of Apple and Pear; Curl Leaf of Peach; Shot Hole of Apricot, and Black Spot of Vine.

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(W.McF.)

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9 DAYS

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Fruitgrowers!—This is the Show at which you should exhibit

Over £400

is offered in PRIZE MONEY, in addition to FOUR HANDSOME SHIELDS.
ENTRIES CLOSE Saturday, 17th August, AT NOON

Prize Schedules, Entry Forms, etc., on application to—

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Experimental Work—Conducted by F. M. Read, M.Agr. Sc., A. G. Strickland, B.Agr.Sc., and Orchard Supervisors.

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Burnley Gardens.—Consultative, etc.; lectures on horticultural subjects by various officers.

Clerical.—Fifteen, clerks, five typists, and two messengers in charge of senior clerk, who carry out the clerical work of the Horticultural and Produce Divisions.

N.S.W. RAILWAY DEPARTMENT PURCHASES.

72,000 Cases of Oranges.

The Railway Commissioners of N.S.W. have purchased 72,000 cases of Oranges for sale at their refreshment rooms: 48,000 are Navels, and 24,000 Valencias. It is expected that the bulk of these will be from the Murrumbidgee irrigation areas. It is expected these will be disposed of by the end of September, leaving four good months for further sales.

Next year it is hoped the sale will be increased to 150,000 cases. The fruit is bought through the growers' organisations and sold at uniform prices.

The object of the Department is to relieve the market of fruit gluts, and as there is a tendency for practically every variety to have periods of over supply, the scheme of purchasing is continuous throughout the year. From the Murrumbidgee irrigation area many thousands of cases of Grapes were purchased and sold at 6d. per lb.

Printed Fruit Wraps

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We solicit your enquiries for the coming season.

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"If you can get Eggs in Winter you can get them any time"

That is the considered opinion of this poultry owner, whose letter is quoted below. That he has a sound basis for this opinion is undeniable, for surely not even the greatest pessimist will say that June or winter months generally is the period most conducive for egg laying. In this month, June, the result obtained was 264 eggs from 11 birds—an average of 24 per bird for a month of 30 days. Isn't that a truly wonderful record for just a few fowls kept under ordinary conditions? Be persuaded by this achievement—by the many hundreds of letters, couched in similar terms, which we have on hand—to begin with Karswood to-day.

"Keeps my birds very fit"

Dear Sir,
I received your very useful book, "Fortunes from Eggs," and I thank you very much for same. I seldom keep any records of my fowls laying, but I kept one for the month of June, and I consider that if you can get eggs in winter you can get them any time. My record shows 264 eggs from 11 White Leghorn pullets and one Black Orpington, first year hen, which speaks for itself. You may use extracts

from either letter in any way you think fit. I find that chicks fed with addition of Karswood Poultry Spice give no trouble, and grow fine, healthy chicks, and your spice keeps my birds very fit.
(Sgd.) H. J. SEYMOUR.

Make this Test

Go to your local grocer, storekeeper, or produce dealer. Get a 1/- packet of Karswood Poultry Spice, then give it to half-a-dozen of your birds, in accordance with the directions on the packet. Do not expect immediate results—Karswood works naturally, not suddenly. It takes at least a fortnight to produce results, but they are good and sure.

Note the Economy

1/- packet supplies 20 hens for 16 days.
2/- packet supplies 20 hens for 32 days.
13/- (7lb. tin) supplies 140 hens for 32 days.

Supplies

Karswood Poultry Spice is obtainable from all wholesalers and stores at the following standard retail prices:
½lb. packet, Price 1/-; 1lb. packet, Price 2/-; 7lb. tin, Price 13/-; 14lb. tin, Price 25/-; 28lb. tin, Price 48/-.

KARSWOOD POULTRY SPICE

4M.29

Increases egg-production without forcing, because it contains ground insects but no cayenne pepper, etc.



MONTHLY REMINDERS.

INCUBATORS are running at full capacity, and in many cases batches of chicks are hatching every few days.

The breeding stock must be kept in good laying condition, but not over forced.

Preserve health and stamina by keeping up the supply of green feed and providing for a rotation of crops.

The addition of meat meal to the mash, and the provision of good sound shell grit will help.

Avoid overcrowding. It is unwise to increase your stock by keeping more chickens than your brooders and houses will comfortably accommodate.

Poultry Feeding Tests.

At the Parafield Poultry Station in South Australia, feeding tests are being conducted. The manager, Mr. C. F. Anderson, reports (in the South Australian Journal of Agriculture) that in January last the production dropped below the average, as the moult was earlier than usual. The leading pen was that of 15 White Leghorns, which laid 245 eggs for the month. The most noticeable falling off was in pen 4 (15 White Leghorns), a dry mash pen, which only had 178 eggs for the month, and at the end of the month all the birds were moulting. The Minorcas were laying consistently, and not showing any signs of moulting. The foregoing applies to the first year's test.

In the second year's test, egg production also fell off in January. The decrease was especially noticeable in the two dry mash pens. It is interesting to note that in the first year's test a dry mash pen also laid poorly for the month (January), and it appears that the four dry mash pens under test moulted at least a month earlier than the wet mash pens. The laying for the month from the 105 birds under test (all White Leghorns) was 1,386, which equals 42.5 per cent. production, as compared with 47.5 per cent. in the first year's test.

Green Feed.—In a lecture delivered by Mr. G. Woodhouse before the Eastern Branch of the National Utility Poultry Breeders' Association,

he stated that green feed is a great preventive of digestive troubles among poultry as well as with mankind. Fowls need varied diets. All of the pea family or legumes are good. For autumn planting the cereals are favored, such as Cape barley, Algerian oats. Peas can be given with these cereals. In winter plant rape, mustard, cabbages, silver beet, spinach, and rye grass are very good foods.

BEEKEEPING NOTES.

Bee Disease Prevention.

BEES need to be studied and cared for, if beekeepers would make a success of their calling or hobby, states Mr. H. Willoughby Lance, Apiculturist, in the W.A. "Journal of Agriculture." First, they need good weatherproof hives of approved design.

Secondly, strong colonies headed by a good queen, preferably Italian, as this race resist disease much better than the Black German.

Thirdly, cleanliness.

Fourthly, knowledge of the normal healthy symptoms of bee-life and being on the alert at the first appearance of anything abnormal.

If using second-hand hives, be sure they are not second-hand because the bees have died of disease. Always see that they are thoroughly disinfected.

"The Australasian Beekeeper"

The leading Bee Journal in the Southern Hemisphere.

A monthly magazine entirely devoted to beekeeping. Published in Australia for Australian Conditions. Subscription (5/- per year, prepaid, post free), may start now.

Free sample copy available on application to the publishers, Pender Bros. Ltd., Box 20, West Maitland, N.S.W.

Much food can be saved by judicious culling. All males not required should be sold and any chicks that are deformed or weakly should be got rid of at once.

Watch for the appearance of pests. Rats and sparrows consume much food if allowed access to the poultry pens. Vermin multiply with the approach of the warmer weather, and houses, nests and perches, should be regularly inspected and sprayed at intervals.

Broody hens will now begin to make their appearance amongst the heavy breeds, and an inspection of the nests after dusk should be worth while. It is much easier to check broodiness at the outset than after a bird has spent several nights on the nest.

All hives should be cleaned once a year. A number of hives should be prepared during the winter, and when the spring examination is made the colonies should be transferred to these. The old hives should then be thoroughly cleansed and scrubbed with a disinfectant. A large number of people in Great Britain use Izal. The strength is 1 part Izal to 300 of water.

The floor boards should be loose, so that it is easy to cleanse at any time.

If the apiarist supplies water for his bees, it is advisable to add a little Izal, especially if there is any disease about, the solution being 1 in 300. In feeding, 1 oz. of Izal to 80 lb. of sugar and 6 gallons of water is recommended as a good antiseptic. The beekeeper should make himself familiar with the early symptoms of the various diseases.

Disease is often caused from empty honey containers thrown out on the rubbish heap, which are cleaned up by the bees, and disease often carried into the hives. The beekeeper should keep his eye open for both the old containers and the appearance of disease.

All colonies should be kept strong in bees, any weak ones in the autumn or spring should be united. Those getting weak through old or failing queen should be re-queened if there is sufficient honey and pollen coming in.

The Fruit Trade

Market Reports and News Items

REPRESENTATIVE FIRMS, FRUIT MERCHANTS, AGENTS, EXPORTERS, Advertising in this Journal.

NEW SOUTH WALES.

Sydney.

Chilton, F., City Fruit Markets.
Louey Pang & Samuel Wong Ltd.,
Thomas St., Haymarket.

VICTORIA.

Melbourne.

Andrew, Fred J., 416 Lit. Collins St.
Cave, F., & Co., Melbourne.
Davis, J., Western Market.
Dennys, Lascelles Ltd., Temple Court,
Melbourne.
Mills, A., & Sons, Western Markets.
Juster, G., Western Market.
Mills, J. B., & Co., Bank House, Bank
Place Melbourne.
Mumford, J. G., 449 Flinders Lane.
Pang & Co. Ltd., H. L., Little Bourke
Street.
Producers' Dist. Society, Western
Market.
Ross, J. W., Western Market.
Silbert, Sharp & Davies, Western
Markets.
Stott & Son, T., Western Markets.
Tim Young & Co. Pty. Ltd., Western
Market.
Year, F. W., 49 William Street.
Woolf, G., Western Market.
Wholesale Fruit Merchants Assn., J.
D. Fraser, Temple Court, 428 Col-
lins St., Melbourne.

QUEENSLAND.

Brisbane.

Barr, A. S., Fruit Exchange.
Collard & Mackay, Fruit Exchange.
Comino Bros. Ltd., Fruit Exchange.
Cooksey & Co., Fruit Exchange.
Geeves, H. V., Fruit Exchange.
Robsons Ltd., Fruit Exchange.

TASMANIA.

Hobart.

E. R. Cottier Pty. Ltd., 88 Collins St.
Jones & Co. Ltd., H., Fruit Exporters.
Peacock & Co., W. D., Fruit Exporters.
and at London.

Launceston.

Bender & Co. Pty. Ltd., 100 Elizabeth
Street.

NEW ZEALAND.

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Co-operative Fruitgrowers' of Otago
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Monro, Geo., Ltd., Covent Garden.
Pask, Cornish & Smart, Covent Gar-
den.
Ridley, Houlding & Co., Covent Gar-
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Hull.

White & Son Ltd.
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Railway. Rep., Major H. S. Cole,
c/o Burns, Philip and Co. Ltd., 7
Bridge St., Sydney.

Manchester.

The Port of Manchester, rep., W. J.
Wade, 8 Bridge Street, Sydney.

GERMANY.

Bremen.

Fruchthandel, Gesellschaft.

Hamburg.

Asthelmer, P. H., & Son, Fruchthof.
Lutten, J. H., & Sohn, Hamburg.
Stier, Aug., Fruchthof, Reps. J. B.
Mills & Co., Bank House, Melbourne.
Timm & Gerstenkorn.

AUSTRALIAN FRUIT IN GREAT BRITAIN AND THE CONTINENT.

London.

Ex the "Benalla."

The Apple market is firm. The "Benalla's" West Australian fruit sold as follow:—Romes, 13/- to 14/- per case; Rokewood, 15/- to 16/-; Jons., 14/- to 15/-; Granny Smith's, 16/- to 19/-; Dunn's, 13/6 to 14/-; others, 12/- to 13/6; Tasmanian Jons., 13/-; Cleos. and French Crabs, 12/- to 13/-; Sturmers, 13/- to 14/6; others, 11/6 to 13/-.

Ex the "West Moreland."

The "West Moreland's" New Zealand Jons. realised 12/- to 14/6; Cox's, 16/- to 25/-; Delicious, 12/- to 14/-; Cleos., 12/- to 15/-. Pears had good demand.

Ex the "Comorin."

The "Comorin's" Tasmanian Pears, in trays, sold at the following rates:—Easter Beurre, 5/- to 6/-; Beurre d'Anjou, 6/- to 7/-; Josephine, 7/- to 7/6; Glou Morceau, 5/6 to 6/-, in half-cases; Vicars, 7/-; Victorian Pears, in half-cases, Keiffer and Winter Cole, 8/-; Bosc, 12/-; in cases, Bosc, 23/-.

Ex the "Orama."

The Apple market is firmer. The "Orama's" Tasmanian fruit sold as follow:—Sturmers, 13/3 to 16/- per case; Cleos., 13/6 to 15/3; Scarlet Pearmain, 14/- to 16/-; French Crabs, 12/6 to 15/-; Five Crowns, 13/6 to 14/-, and Scarlet Nonpareils, 14/6 to 16/-.

Ex the "Demosthenes."

The Tasmanian Apples shipped by the steamer "Demosthenes" realised the following prices:—Sturmers, 14/- to 16/-; Alfristons, 14/- to 15/-; Duke of Clarence and Dunn's, 13/- to 16/-.

Ex the "Rangitiki."

New Zealand Sturmer and Dougherty Apples from the steamer "Rangitiki" have been sold at 16/- to 18/- a case.

Ex the "Narkunda."

Apples: Scarlet Pearmain, 14/3 to 18/6 a case; Cleos., 13/9 to 18/-; Sturmer Pippins, 14/6 to 20/-; Stone Pippin, 15/6 to 16/3; French Crabs, 15/6 to 17/-; Democrats, 17/- to 22/-; Munro's, 15/- to 17/-; King David, 15/9 to 17/9; Aromatics, 15/3 to 16/6. Pears: Winter Nelis, 6/6 to 8/9 a tray, a few to 11/-; Jose-

phines, 6/- to 10/-; Glou Morceau, 5/- to 7/-; Easter Beurre, 5/6 to 7/6; Broome Park, 5/-.

Southampton.

Ex the "Narkunda."

New Zealand Pears, ex the "Narkunda," sold at 18/- to 24/- a bushel case.

Liverpool.

Ex the "Telamon."

The "Telamon's" Apples at Liverpool, sold as follows:—West Australian Cleos., 16/- to 17/9 per case; Dunn's, 15/6 to 16/9; Sturmers, 15/- to 16/9; Statesman, 16/- to 17/-; Tasmanian Sturmers, 13/9 to 15/9; King Davids, 14/- to 15/3, and Five Crowns, 12/- to 14/-.

Ex the "Demosthenes."

In the Liverpool fruit market there is good demand for the "Demosthenes'" Tasmanian Apples. The following prices have been realised:—Cleos., 18/- to 20/-; Sturmers, 14/- to 18/6; Scarlets, 11/3 to 17/-; Jons., 13/- to 17/9; French Crabs, 14/- to 17/9; Five Crowns, 14/6 to 16/3. Tasmanian pears are in variable condition, with some wasty cases. Sales:—Anjou, 13/- to 15/-; Bosc, 17/- to 17/9; Easter Beurre, 13/6 to 18/-; Vicars, 11/9 to 15/3; Winter Cole, 16/6. Half cases of Glou Morceau brought 6/- to 10/6. In trays all varieties brought proportionate prices.

Ex the "Raranga."

The "Raranga's" New Zealand Apples are rather ripe. Sales:—Granny Smiths, 17/6 to 20/-; Sturmers, 16/- to 17/6; Delicious, 15/9; Jonathans, 12/- to 15/-.

Hull.

Ex the "Ferndale" and "Hobson Bay."

West Australian Granny Smiths, 17/6 to 23/-; Romes, 17/- to 18/-; Rokewoods, 18/- to 19/9; Cleos., 18/6 to 19/6; Dougherty's, 18/6 to 19/-; Yates, 18/- to 18/6; Tasmanian Sturmers, 14/- to 16/9; Scarlets, 15/3 to 16/-; Cleos., 14/9 to 17/3; French Crabs, 15/- to 16/3; Rokewood, 18/-, and Dunn's, 16/6. Tasmanian Josephine Pears, in half cases realised 10/9 to 11/9; Winter Nelis, 10/- to 11/9; in trays, Glou Morceau and Vicars, 6/6.

Manchester.

Ex the "Banfshire."

The "Banfshire's" Tasmanian Apples at Manchester were sold as under:—French Crabs, 12/- to 13/3; Alfristons, 12/6; Cleos., 12/- to 13/9; Adams, 11/- to 13/-.

Glasgow.

Ex the "Westmoreland."

The "Westmoreland's" New Zealand Apples at Glasgow were disposed of as under:—Jons., 13/- to 15/-; Delicious and Statesman, 13/- to 16/-; Dunn's, 14/- to 16/-.

Ex the "Telamon."

The "Telamon's" Apples at Glasgow met with good demand. West Australian sold as follow:—Granny Smiths, 17/- to 19/- per case; Cleos., 16/- to 18/6; Dunn's, 13/6 to 17/-; Romes, 16/- to 17/6; Doughertys, 16/6 to 17/6; others, 14/- to 17/-, and Tasmanian Sturmers, 13/6 to 15/6.

Germany.

Hamburg (21/6/29).

Messrs. Barker, Green & Parke Pty. Ltd., report having received cable from Messrs. Timm & Gerstenkorn, re sales of Apples, shipped per s.s. "Delphic," sold at Hamburg:—

11,600 Cases Tasmanian Cleos., 16/- to 18/-; Dunn's and Jons., 15/- to 17/-; Sturmers, 14/- to 17/-.

"Justin," 10,700 cases Chilian Hoovers, large sizes 10/- to 14/-, smaller 14/- to 18/-; Newtons, 17/- to 19/-; strong demand.

Hamburg.

Ex the "Port Brisbane."

W.A. Apples: Cleos., 15/- to 19/- a case; Dunn's Seedlings, 14/3 to 20/6; Jons., 11/- to 15/3; Rome Beauty, 13/- to 15/6; Granny Smith, 15/- to 17/3. Pears: Vicars, 10/9 to 13/6; Josephines, 11/9 to 22/6; Winter Nelis, 14/8 to 17/2.

Ex the "Leuna."

Tasmanian Apples from the steamer "Leuna" are in better condition than recent arrivals. Sales have been made at the following prices:—Cleos., 11/- to 15/- a case; Jons., 7/- to 14/-; Dunn's Seedlings, 12/- to 14/-.

Ex the "Delphic."

At Hamburg the "Delphic's" Tasmanian fruit sold as follow:—Cleos., 16/- to 18/-; Dunn's and Jons., 15/- to 17/-; Sturmers, 14/- to 17/-.

AUSTRALASIAN MARKETS.

New South Wales.

Sydney (25/6/29).

Apples.—Tasmanian, dessert, Jons., Democrats, Croftons, and G.F., 10/- to 15/-; Scarlets, 10/- to 14/-; Cleos., 10/- to 14/-; Sturmers, 9/- to 12/-; French Crabs, 10/- to 14/-; local, dessert, 8/- to 10/-; choice, to 15/-; cooking, choice, 12/- to 13/-; medium, 10/- to 11/-; small, 8/- to 9/-; Granny Smiths, 10/- to 20/- per bushel case. Bananas (genuine

grades).—Extra special, 32/- to 34/-; special, 27/- to 30/-; choice, 24/- to 26/-; standard, 16/- to 22/- per case. Chillies, 7/- per bushel case. Citrus Fruits. — Lemons, local, colored, choice, 10/-; medium, 7/- to 8/-; small, 5/- to 6/-; irrigation, 7/- to 10/-; mandarins, 4/- to 11/-; Oranges, Navel, 6/- to 12/-; irrigation, 10/- to 11/-; Common, choice, 9/- to 12/-; medium, 7/- to 8/-; small, 5/- to 6/-.

Custard Apples, 5/- to 8/- per half-case. Passion Fruit.—Local, 3/- to 10/-; choice, 12/-.

Pears.—Victorian, 12/- to 16/-; Tasmanian, Josephines, 11/- to 16/-; Winter Nelis, 8/- to 14/-; Winer Coles and Packhams, 10/- to 14/-; a few 15/- per bushel case. Paw Paws, 10/- to 16/-.

Pineapples.—Queens, colored, 14/- to 18/-; few 20/-; green, 12/- to 16/-.

Strawberries.—Queensland, 8/- to 10/- per tray.

Victoria.

Melbourne (24/6/29).

Apples: Good to choice eating, 11/-, 15/-; good to choice cooking, 9/-, 13/- a case. Bananas: Queensland special, green, choice, 26/-, 28/-; standard, 22/-, 26/-; plains, 15/-, 20/- a double case. Lemons: Nominally, 6/-, 8/- a case, there being practically no demand. Mandarins, 12/- 15/-.

Oranges: Common, 8/-, 11/-; few specials higher; Navel Oranges, 8/-, 12/-; few special brands to 14/-, 15/-; Passion Fruit, 12/-, 18/-; Pineapples: Queens, 12/-, 16/- a double case; Tomatoes: Queensland, 8/-, 10/- a case; ripe, higher; Custard Apples, 6/-, 9/-; Grapefruit, 11/-, 16/-; few higher.

* * *

Victorian Central Citrus Association reports that the citrus market was dull, following the cold and wet weather over the week-end. Navels, average standard (shed pack), 75 8/-, 84 9/-, 96-112 10/-, 126-140 11/-, 154-168 12/-; specials higher; other standard shed packs 1/-, 2/-, and 3/- a case higher, according to pack, quality, and demand. Commons: 140, 9/- to 11/-; 160-180, 11/- to 12/-; 200, 9/- to 11/-.

Mandarins: 160-216, best, to 13/-; 140, to 12/-; 220-250, to 12/-; large and small, from 9/-.

Lemons: 6/- to 9/-.

Grapefruit, 53-60, to 16/-; 32-45, 13/-; mixed packs, lower.

Queensland.

Brisbane (20/6/29).

Local Fruit.—Oranges, best 10/- to 12/- a bushel case, others 6/- to 8/-; Navels, 10/- to 14/-; Mandarins, Scarlets, 10/- to 16/-; Emperors, 10/- to 16/-; Glens, 10/- to 16/-;

Feutrals, 8/- to 10/-; Lemons, colored, 5/- a quarter-case; others, 2/- to 3/-; Grapefruit, 5/- to 6/-; Custard Apples, 2/- to 5/-; Papaws, ripe, 5/- to 7/- a case, 3/- to 4/- a tray, green 3/- to 4/-; Passion Fruit, 4/- to 10/- a quarter-case; Pineapples, rough 6/- to 8/- a case, smooth 8/- to 9/-; Strawberries, specials 16/- a dozen boxes, others 7/- to 14/-.

Imported Fruit.—Apples, 11/- to 17/-; Pears, 12/- to 17/-; Oranges, Navel, N.S.W., 13/- to 14/-.

West Australia.

Perth (20/6/29).

Jons., 6/- to 12/-, special to 13/6, inferior, from 3/6; Dunn's, 8/- to 12/-, special to 14/6, inferior, from 3/6; Rome Beauty, 7/- to 12/-; others from 4/-; Delicious, 9/- to 15/-, small from 3/-; Yates, 1/6 to 8/6, prime to 14/-; Granny Smiths, 9/- to 16/-, others from 5/-; Cleos., 4/- to 10/-, prime, to 13/-; Dohertys, 3/- to 10/-; other varieties, 2/- to 10/-.

Pears, 4/6 to 10/3; dumps, 2/6 to 5/6.

Oranges, Valencia, 3/- to 7/-; Navels, 4/6 to 10/-, others from 3/-; dumps, 8/- to 14/-, others from 5/-; Lemons, 5/- to 10/-, others from 2/6.

Tasmania.

Hobart (22/6/29).

Apples: S.T.P., 5/- to 10/-; S.P.M., 5/6 to 10/6; Democrats, 5/6 to 12/-; Delicious, 5/- to 10/-; Statesman, 5/6 to 7/-; Granny Smith, 5/9 to 7/- medium; Jons., 6/- to 9/-; F.C.P., 5/- to 8/-; B.O., 4/6 to 6/- a case. Pears: W.N., 4/- to 6/6; Nap., 4/5 to 6/-; W.C., 4/- to 5/- a case.

South Australia.

Adelaide (20/6/29).

Apples: Eating, 15/- to 16/- per case; cooking, 14/-; Bananas: Queensland, 34/- to 36/-; Lemons, 6/- to 7/-; Melons, Pie, 5/- per cwt.; Almonds, 9d. to 1/- per lb.; Brazil Nuts, 12/- per dozen lb.; Peanuts, 11/6; Walnuts, 12/-; Barcelona, 12/-; Oranges, Common, 8/- per case; Mandarin, 14/- to 16/-; Navel, 12/- to 14/-; Poorman, 8/-; Passion Fruit, 27/-; Pears, eating, 10/- to 12/-; Pineapples, 25/- to 27/-; Quinces, 7/-.

Nitrophoska I.G. 16.5%, 16.5%, 20%. Messrs. Dyes & Chemicals (Aust.) Ltd., whose advertisement appears elsewhere for the above-mentioned product, have pleasure in advising their price for same as: £22/15/- per ton, f.o.r. Melbourne. In order that growers may cover themselves for supplies of this synthetic manure, they are advised to place orders as soon as possible for the new seasons' supplies.

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for Citrus, and as an ovi-
cidal spray for Pear and
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Spray
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all Deciduous Fruit Trees.

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"Kleenup" can be used in conjunction
with Bordeaux Mixture or Lime Sul-
phur and in this way is a **Dual Spray**
for Scale Insects, Aphis, Red Spider,
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"KLEENUP" is not an expensive spray, but it is an effective one.

PRICE—4/- per gallon. Packed in 20 gallon drums.

"KLEENUP" is a product of the California Spray Chemical Co. who are
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FRUIT SIZING MACHINES

A Review of the Facilities Now Offering to Growers.

(By P. H. Thomas, Tasmanian State Fruit Expert.)

THE majority of fruitgrowers recognise the importance of marketing their products on standardised lines.

During recent years the competition that has been experienced has made it necessary that close attention should be devoted to the improvement of methods of grading and packing, if the Apple industry is to maintain its place upon the world's markets. One of the most important essentials towards the successful marketing of fruit is the separation of the different sizes and packing these according to the grade requirements. Where this principle is put into operation the processes of f.o.b. purchase, auctioning, selling and retailing can be conducted in a better and more effective manner, and consequently, such fruit will find a readier and more profitable market. The system also gives an additional advantage to the grower.

"Properly sized fruit can be converted into a more efficient package," and consignments that have to withstand the loading, handling and cart-

age that is necessary in transit to the different markets will arrive in much better condition if not subjected to the bruising that is generally experienced from a "pack" that has become slack through the movements of the fruit in the container.

In the early days of fruitgrowing, "sizing" was generally performed by hand. Many growers still adhere to this method, especially in handling varieties that are known to possess tender skins which are susceptible to bruising. To-day, with the increase in production, the limited periods of export and handling and the necessity of marketing regular supplies throughout the season, time is a very important factor, and any means that will facilitate the handling of fruit during the packing operations is generally welcomed.

After a number of years of experiment a selection of "Apple graders" are now at the choice of the producer to assist in preparing fruit for market. These vary considerably in both design and efficiency. It is with

the object of assisting toward the choice of a suitable machine that I am taking this opportunity of briefly reviewing the different types and comparing their respective merits and disadvantages.

The term "grader" as applied to many machines is misleading. "Grade" is a comprehensive designation, that covers quality, size, and freedom from imperfections. No apparatus has yet been evolved that will separate fruit into grades, and those which are upon the market under this appellation are entirely for sizing purposes, the actual grading having to be performed by hand labor.

Apple and Pear sizing machines may be divided into three general classes—the "belt," "shaft," and "weight" systems of operation. The "belt" system is perhaps the oldest type machine in use in Tasmania, the fruit being fed through a series of "races," which guide it over a number of revolving leather belts in which circular holes of varying diameters have been cut. This system of sizing has a number of advantages. The machine may, by the inclusion of a number of extra belts and races, be made adaptable to almost any conditions. The mechanism is simple and cannot easily get out of order, and will quickly deliver the fruit with very little size variation.

The principal disadvantage is that the larger sizes have the longest "travel," the system making it necessary that this fruit be propelled over the smaller holes being somewhat to its detriment. This class of machine is especially suited to round or "roundish flat" Apples, but does not operate so efficiently upon those of "long" or "Pearmain" shape. The machine is also unsuited to Pears, except those of the short, roundish varieties.

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by the Hydro Vacuum process, Australian Dried Fruit could be so treated, and sent out in sealed containers to prevent re-infection. With such delightful, clean fruit, public confidence would be gained, resulting in mutual satisfaction and bigger trade. The old-time fumigating system has been rendered obsolete

By the Sterilizing Process

perfected in Victoria and patented through the Commonwealth. Strict tests under Government supervision prove that this process is absolutely satisfactory in the destruction of all insect life and eggs in dried fruits, nuts, grain, borers in timber, eelworm and bulbmite in bulbs. This effective system

Of the Hydro Vacuum Fumigation Co. Ltd.

is in operation at the Company's works, Ingles-street, Port Melbourne. The penetration of the lethal gases is complete, without opening cases or cartons. Further, the goods are in no way harmed. Full information is contained in a descriptive booklet obtainable free on request. This contains report of demonstration on September 4, before Federal and State Government officials.—Write for your copy now.
The Hydro Vacuum Fumigation Co. Ltd., officially registered as a Quarantine Station by the Plant Quarantine Department. Works: Ingles-street, Port Melbourne. Office: Temple Court, Collins Street, Melbourne, C.I. Phone: Central 2670.

The "shaft" system of sizing is of recent introduction. The method of operation is simple, the fruit being fed on in a travelling band, that operates in conjunction with a revolving tapering shaft, designed to release the fruit according to the diameters required. This class of machine is especially suitable for small sheds, and with careful operation will deliver the fruit in a satisfactory manner. This system of sizing, whilst operating somewhat slower than others, is adaptable to most fruits, and will effectively deal with long varieties of Apples and Pears, but difficulties are generally experienced with roundish, flat varieties of fruit. This type of machine also has the disadvantages of carrying large and easily bruised fruit the whole length of the apparatus.

The "weight" type of "sizers" are perhaps the most cleverly constructed, and the adoption of this principle has solved the problem of the varying shapes that are experienced among out Apple and Pear varieties. The system, whilst at first appearing complex, upon investigation is simple. Each fruit is virtually weighed, and is only released into the bins if it corresponds with the weight adjusted for each delivery. The machine is

especially suitable for big packing sheds, and the delivery can be altered to effectively deal with "lines" of fruit in which one or two sizes predominate.

Another type of sizer that deserves recognition is that in which the fruit is conveyed upon a series of travelling bands until each size is gently brushed off into the bin by small overhead revolving bands, which are adjusted to varying heights. This is one of the most perfect methods of sizing, but the necessity of placing each fruit in position upon the bands makes the operation slow. Both the latter described classes of sizers must be operated by a power unit, but very efficient machines of the "belt" and "shaft" type are available under hand power, which are suitable for small packing sheds. Most sizers are now fitted with a "hopper" or mechanical "feeder," which automatically regulates and feeds the supply of fruit on to the sizing machinery.

Although the ideal sizer possessing all the desired attributes has still to be manufactured, the existing machines, with intelligent operation, can give invaluable service in the packing shed, and enable fruit to be prepared for marketing far more ex-

peditionously and effectively than by hand sorting. Compare the shop windows. Nothing looks more attractive than a selection of properly sized fruits, and the retailer will dispose of any doubts as to the readier demand that is experienced for such lines.

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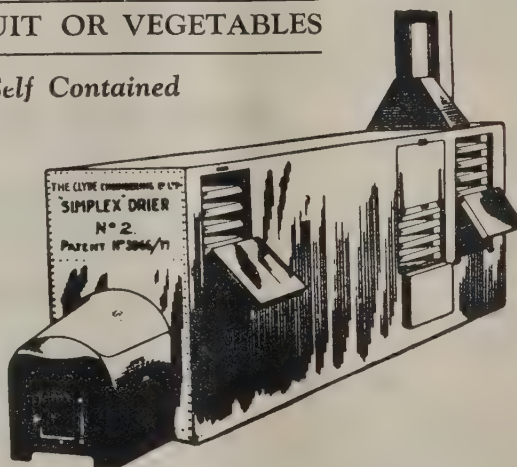
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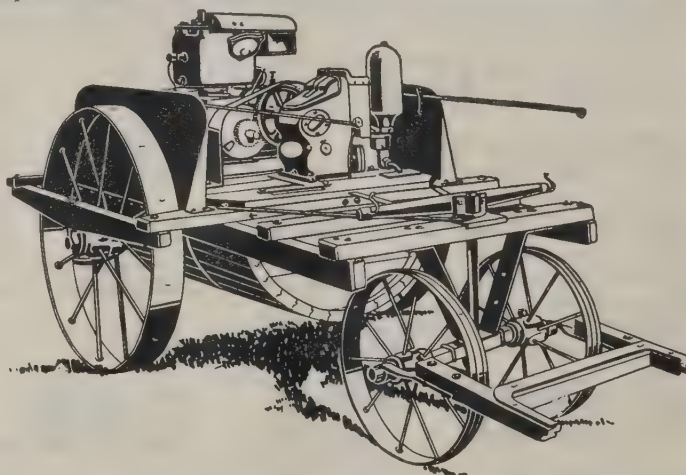
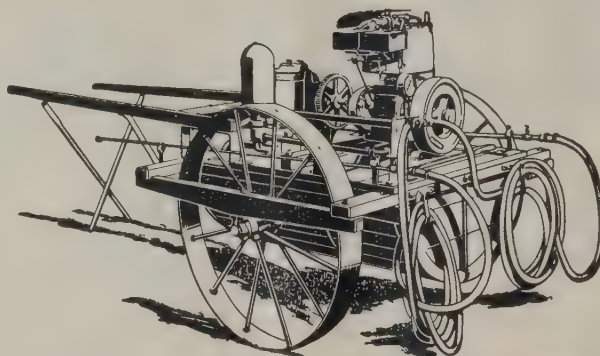
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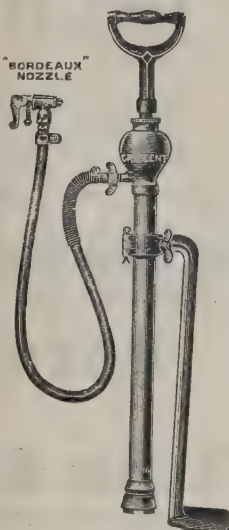
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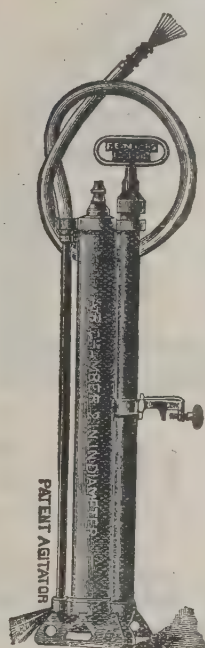
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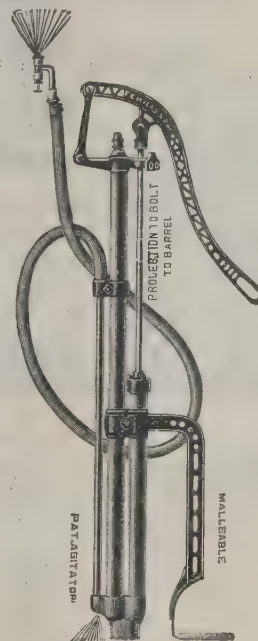


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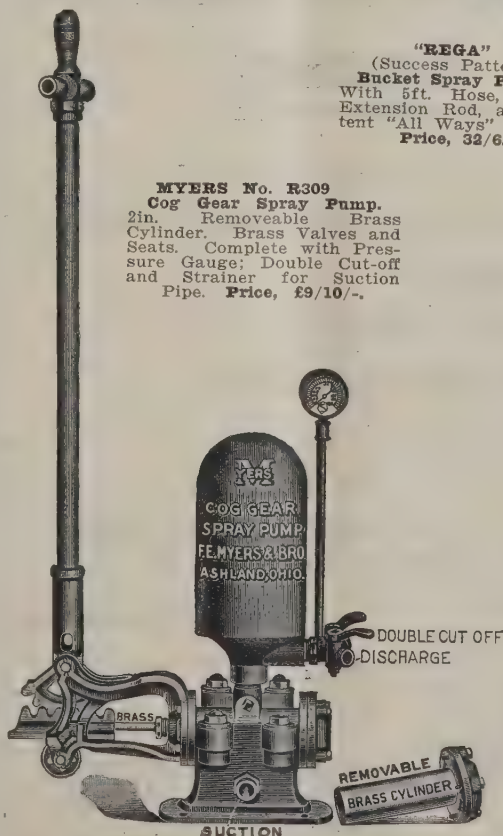
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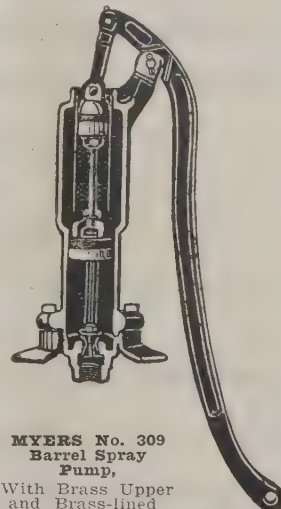
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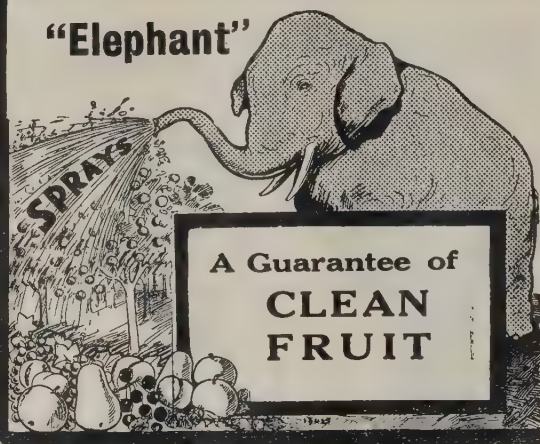
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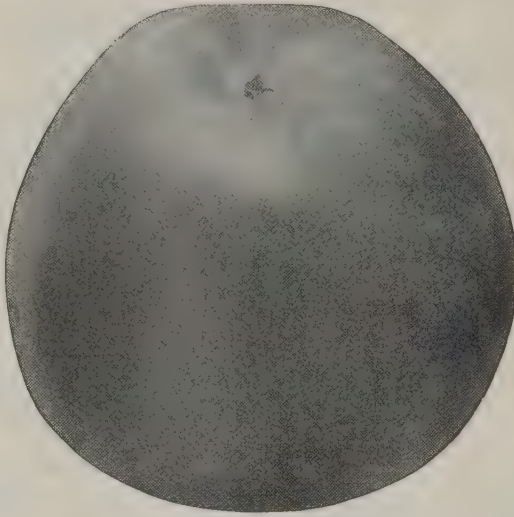
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NEWS AND NOTES.

At the recent elections in Queens-
land, the Labor Government was de-
feated. One of the first acts of the
Country-Nationalist Government has
been to cancel the Rural Workers'
Award (excepting in the sugar in-
dustries). This has given relief to
fruitgrowers and farmers, and in-
creased employment.

COOL STORES CONFERENCE.

The Annual Conference of the
Fruitgrowers' Cool Stores' Associa-
tion of Victoria will be held on Tues-
day, August 13, at Anzac House, Col-
lins-street, Melbourne. The President
is Cr. Walter Mock, and the Secre-
tary Mr. J. G. Aird, Ringwood. Many
important items are coming up for dis-
cussion.

The Reworking of Fruit Trees.

Grafting, Budding, Inarching, Tree Surgery.

(By P. H. Thomas, Senior Horticulturist, Tasmanian Department of Agriculture.)

Grafting.

ONE of the greatest obstacles experienced in standardising fruit at the packing shed is the number of varieties that some areas of orchard are producing, many being inferior from a marketing viewpoint.

Again, certain orchardists in various districts are finding that their choice of varieties has not proved suitable to the locality, in some instances being of very little commercial value. In these cases the grower is faced with the adoption of either of two methods in order to rectify the disability.

A decision must be reached whether to replant or rework the particular area to a more desirable kind.

The first question that should be taken into consideration is the choice of the varieties the trees are to be worked over to. It is now commonly accepted that the

principle of selection

should be embodied in all plant propagation, and this factor should certainly be taken into consideration in making the choice of trees from which scions are to be obtained for the operation.

During the winter months the number of scions required should be chosen and taken from trees that are known to be vigorous and productive. These should be carefully "heeled in" in a dry and well-drained situation, so that they may retain their "dormant" condition, and be kept fresh and plump until the period for grafting arrives.

"When is the best time for grafting?" This is a question that is often asked, and is somewhat difficult to answer definitely. An approximate date may be given for the different kinds of fruits, but the orchardist may more easily and surely determine it for himself.

When the first sap movement is observed in the trees—that is when the buds commence to swell—is a time when the work may be commenced. It may be continued as long as the scions employed retain a semi-dormant condition. The main principles that should be observed in order to obtain successful results are:—

(1) Clean cutting with a sharp knife of both the scion and the tree that is to be reworked, according to the method that is to be adopted.

(2) The scion should be firmly affixed to the part with which it is to make union by tying tightly with raffia, tape, or other suitable material.

(3) Air and water should be excluded from the cut surfaces by covering entirely with a good grafting-wax.

The preparation of the tree is a very important matter, but, unfortunately, has been little considered by a large number of orchardists. In younger trees (those up to about six or seven years old) very little trouble is experienced in obtaining a good percentage of grafts to take. Of late years, however, a great deal of damage has resulted, and older trees have been severely injured and sometimes killed by a species of "die-back." This may appear in the first year of grafting, or even after the scions have taken and made fair growth. The origin of this trouble is due to infection by a fungus disease known as *Polystictus versicolor*, which attacks the cambium layer at the exposed cut and spreads downwards, killing the tissues.

It is noticeable that the disease is not nearly so prevalent where trees are not cut too hard back for reworking, or where a number of limbs have been left unshortened in the grafting operation, and maintained until the scions have become established.

In view of this, the best advice that can be tendered to the operator is not to cut the trees that are to be grafted too hard back, but to come higher up into the tree, grafting upon younger wood, and leaving one or two limbs to make foliage and carry on the functions of the tree until the grafts have become established.

Some growers advocate that the de-heading process should be carried out in the autumn, as it gives the tree an opportunity to callus over its cut surfaces before grafting. I have examined a number of trees that have been treated in this way, but have been unable to find any evidence of callusing or any material advantage accruing from the practice. Very little healing will take place after the autumn, and it often happens that the bark and cambium become destroyed through the action of water for about half an inch below the edge of the wound, making it necessary to

repeat the operation and cut back into the green, live wood before inserting the graft.

When de-heading, care should also be taken to choose limbs that are in a good position to take the graft, and thus ensure a symmetrical and well-balanced tree.

There are a number of different methods of reworking fruit trees by means of grafting, and the most popular are known as the "rind," "strap," and the "tongue" grafts.

Rind Graft.

This is especially suited for older trees. The main branches of the tree that has been de-headed are carefully smoothed with a knife, and a longitudinal cut of about 1 inch is made in the bark at the most convenient spot to receive the graft. The scion is prepared by simply making a long sloping cut of about the same length at the base of a piece of young wood about 4 inches long, and trimming the edge down one side of the cut, so as to put a very fine angular corner on the cut surface. This gives the scion a wedge-shaped end. The bark of the tree is now raised on one side of the longitudinal cut, and the scion inserted underneath, in such a position that the prepared edge comes into contact with the shoulder of the bark on the other side, pressing down steadily until the scion is firmly held in position. The graft is then tightly bound with a wax cloth or tied with raffia, and sealed with grafting wax, care being taken that no air or water may enter into the cut surfaces.

In cutting the scion it is advisable to retain a bud at each terminal. The lower one of these at the bottom of the scion will help to hold the sap and promote the union of the graft. Three buds are sufficient to leave in order to produce growths for the future framework of the tree, and these should be so situated that the resultant shoots will occupy positions which will produce an evenly balanced framework.

Strap Graft.

The "strap graft" is prepared in a very similar manner to the "rind," except that before making the sloping cut, a thin piece of bark is cut upwards on one side of the scion. This is laid back, and the graft completed

in the same way as with the "rind" graft. When inserted, the strap is brought over the top of the flat surface of the limb and tucked under a piece of bark that is raised on the other side. This is one of the neatest methods of reworking old trees, and although it involves more time in carrying out, the benefits obtained from the quicker healing of the exposed surfaces and the brace that is afforded to the scion fully compensate for the extra labor.

Tongue Graft.

With younger trees this method may be employed to advantage. The small "stubs" or branches that the tree has been cut back to should be treated in the same method as explained in the preparation of the scion used in the "rind" method, with the addition that half-way along the slanting surfaces a tongue is formed by cutting about a quarter of an inch into the wood. The scion of the variety to be grafted is treated in a similar way, and the scion and stock should be united so that the tongues of wood overlap and fit into each other, making a strong spliced union. Care should be taken that the cambium layers of both parts come into contact, otherwise union will not take place.

The cambium layer is situated between the bark and heartwood. In Apples, Pears, and Plums no difficulty is experienced in bringing this about, as the barks of the scions and young trees to be reworked are of much the same thickness. There are a number of other ways of grafting; amongst these are the "wedge" and "saddle" methods. In the former, it is necessary to split the limb that is to be treated. A scion cut to the fashion of a wedge is introduced, so that the cambium layers of both come into contact. The principal objection to this method is that a crevice is made in the limb, which takes longer to heal over, besides forming an ideal place for the lodgment of spores of the different fungi, and a harbor for insect pests.

Apples, Pears, Plums, and Cherries may all be successfully treated in the manner described. Peaches and Apricots, however, do not respond to grafting. With these fruits the best method is to cut down old trees and "bud" into the new wood made during the summer months.

If good results are to be obtained the operator should endeavor to get thoroughly into the way of handling a knife before attempting to carry out the work in the orchard, and learn how to make the necessary cuts required. Select a number of pieces of wood (pruning sticks) and practice

upon these as if they were the scions to be utilised.

Grafting Wax.

A good grafting wax may be prepared by melting the following ingredients together over a slow fire:—3lb. resin, 2lb. beeswax, 1lb. mutton tallow.

The consistency of the preparation may be altered by increasing the tallow to make it softer, or the beeswax if a harder wax is desired.

Waxed calico is prepared by dipping 6-inch strips of a cheap calico into a hot wax composed of the following ingredients:—3lb. resin, 2½lb. beeswax, 2lb. tallow.

After thorough soaking the strips are immediately drawn between two rounded lengths of wood fastened together at one end. This process removes the surplus wax, leaving the calico impregnated with sufficient wax to make an adhesive tape which will serve the dual purpose of waxing and binding the scions into position.

Budding.

BY the method of reworking known as "budding" practically any kind of deciduous fruit can be either propagated or reworked to some other variety, and owing to the ease, quickness and the period of the year in which it can be performed it is much favored by operators.

Budding may be carried out with best results at that period in the growing season when the buds of the variety desired for propagation or reworking, and of the same season's wood, are matured and fully formed, and the sap movement allows the bark to lift freely.

In the case of old trees, preparation for the operation should be made by "de-heading" the preceding winter. This allows a number of young growths to sprout from the stumps of the main limbs, in which the buds can be placed.

It is not advisable to attempt to "bud" into the thick bark of old trees. When the trees have been "headed back" to the desired height, only the young shoots that are in the most advantageous position to receive the buds and reproduce a strong symmetrical framework for the tree should be retained. A "T" shaped incision is made in the base of these growths where they spring from the old trees, the vertical cut being made first.

The bark is then gently lifted by using the bone end of the budding knife to allow the insertion of the bud. Care should be taken not to score too heavily into the wood under the bark in making the cut. A rounded point is better on the budding knife than a sharp one, and if the edge is sharp

only a gentle pressure is required to free the bark.

The bud is removed

from the "bud" stick by cutting into the bark about $\frac{3}{4}$ of an inch below the base of the bud, drawing the knife along and detaching a thin shield-shaped piece of wood and bark with the bud in the centre.

In some varieties of fruits better results are obtained by removing the small piece of "Heartwood" which is contained in the bud, by inserting the blade of the knife between the bark and wood and with a quick turn detaching them.

This should be carried out in all fruits that have thick barks, such as Cherries, Peaches, Apricots, etc. Pears, Plums, and Apples will "take" without removing the "heartwood," but it is necessary to cut a thinner type of bud, otherwise it distends the enclosing bark, and creates air pockets.

If the wood is removed from the bud, especial care should be taken to see that the small pin point of wood which runs through the centre of the bud is not removed with it. Should this come away the bud is useless, and should be discarded.

The bud is now inserted between the bark and the "heartwood," and gently pushed down into its place, using the leaf stalk as a handle, until the horizontal cut and the top of the bud are flush with each other. It is then bound tightly with raffia, or some other soft pliable substance, leaving the leaf stalk protruding.

After about three weeks if the leaf stalk readily becomes detached with a slight downward pressure, it is an indication that success has been achieved.

It will be necessary to watch the ties that have been used to hold the bud in position in order to prevent them from cutting into the bark as the shoot develops and thickens.

The bud in most cases will remain dormant until the following spring. Heading-back is carried out during the dormant period, and should be performed with a sharp knife, cutting to about half an inch above the bud, and making the cut with a slight slant away from the top of the bud.

During the ensuing growing season all superfluous shoots that may appear, other than those that spring from the inserted bud, should be removed.

Inarching.

INARCHING is a simple operation and can be adapted to a number of uses. It is a popular and efficient method for the propagation of certain plants and trees that cannot be raised by the general prac-

tices of seeding, cuttings, or ordinary grafting, and is carried out by bringing cut surfaces of two growing plants into contact.

These are tied tightly together, waxed, and allowed to remain in position until the parts have grown together. Separation of the variety that it is desired to propagate is then made from the parent plant, the head of the stock is removed, and a transfer of the variety is effected without suspending any of its functions or growth.

This operation is very seldom necessary to the orchardist, but the principle can be applied in a very beneficial way as a brace for weakly limbs or the main branches of trees that have a lateral growing tendency.

Two strong laterals growing on opposite or contiguous main limbs are selected. The limbs are then brought together by a temporary brace, so as to permit the laterals being entwined. The ends are tied and allowed to remain so for a season of growth. The following year it will be found, if the tree is fairly vigorous, that the laterals have grown together. The temporary brace can then be removed, and replaced by the permanent one formed by the tree's own members.

"Inarching" is a method that sometimes is used for purposes of reinforcing or strengthening the rooting system of a tree, which may be necessary through the roots being affected with fungi, or injured from other causes.

In the case of an Apple, a hole is dug in the soil, as near to the main barrel of the tree as possible, avoiding any large roots that radiate from the stem.

A T-shaped incision

is made in the bark of the main barrel, about six inches above the soil surface, similar to that for budding, only in this case it is inverted. A strong Apple seedling is then selected, and a slanting diagonal cut made at the required height similar to that used in a tongue graft. The stock is then inserted in the inverted T-shaped incision in such a position that its roots may be covered when the hole is filled. It is then bound in position with raffia, waxed to keep out the water, and firmly planted against the treated tree.

A number of stocks can be used in this way to reinforce a large tree; in a few years they will establish themselves as a succession of feeders, and develop a new rooting system.

"Bridge grafting"

is a very convenient operation that can be used in cases of bark injury caused by rodents or disease. In

cases of trees that have been girdled by rabbits, it is advisable to insert a few bridge grafts to assist healing and to ensure the regular sap flow.

Similarly, it often happens when treating cankers caused by fungus or bacteria that a large area of bark on the main barrel has to be removed, and the wound sterilised. In either case the tree has received a severe shock, and will require all the assistance it can obtain in order to survive.

Bridge grafting is carried out by bringing the upper and lower bark of the wound into communication by means of a number of "bridges" of young wood that are inserted in the green and healthy bark above and below the cut.

The scions which are used in the "bridge" should be selected from wood of the previous season's growth, and the operation performed while the tree is in a dormant condition. These should be trimmed a little longer than the space to be "bridged," and cut on the slant at each end in the way detailed for inarching, so that the bevelled points are each on the outside of the scion.

Vertical cuts are then made at opposite intervals above and below the wound, the scions being inserted in the cut, bound with raffia, and waxed to keep out water. In a few years a bridge will be formed over the injured surface, which will ultimately heal and merge into the original bark.

Tree Surgery.

FRUIT TREES, besides being prone to the attacks of insect and fungus pests, are often subject to injury from wind storms and the depredations of animals.

In consequence, it is sometimes necessary to remove some portions of the tree or employ methods that ensure the quick healing of wounds.

Tree surgery may be described as the remedial work necessary in cutting out all decayed, diseased, or injured wood and bark, and the processes of sterilisation and waterproofing of the wounds made so that the tree will not suffer to any great extent from the decaying tissue.

Each year the orchardist is generally faced with the necessity of removing certain limbs or portions of the tree for some cause or other. Unfortunately, this operation is often carried out in a rough and unintelligent manner.

The wounds are left exposed to the attacks of fungi, and no assistance is given to them to withstand the shock of the treatment.

Wounds made from various causes require careful attention, and the treatment should be watched from year to year. The work requires the

application of scientific principles, and any defects should receive immediate attention.

Operators who possess a knowledge of the structure and physiology of a tree are seldom guilty of neglectful treatment in this way, and one of the surest ways of effecting improvement in method is by instruction on these lines.

When removing decayed, dead, or unnecessary limbs, cutting off stubs left by improper methods of pruning, and treating the wounds and cavities so as to prevent decay and secure proper healing, it is advisable to operate in the following manner:—

Obtain a fairly fine saw, and remove the portion with as little injury as possible to the surrounding bark and cambium. The finest saw will leave a rough surface to the cut, so it is advisable to pare a thin layer off with a sharp knife until it is smooth. This will promote more rapid healing, and give more resistance to the lodgment of fungus spores.

The cuts should be made as close to the main trunk or limbs as possible, the object being to remove the limb in such a way as to leave the smallest possible exposed surface to be healed over.

Very often limbs are situated in awkward positions in the tree and require removal. The use of an adjustable saw will greatly facilitate this work. The saw is shaped like a fret-saw, the blade being held in pivots, so that it may be turned in any direction required.

The removal of decayed and diseased bark and wood is best carried out by the use of a sharp broad chisel and metal scraper. If the injury is at all deep-seated it will be necessary to use a light wooden mallet. All injured or partially decayed tissue should be cut away until the wound is ringed with clean green bark.

It is advisable at this juncture to stress the necessity of thoroughly cleansing all tools by dipping or wiping with an antiseptic after treating diseased trees. A weak solution of formalin is as good as anything for this purpose, and will kill any spores or bacteria that may be transmitted from one tree to another in the process.

Treatment of Wounds.

If left exposed, without any protective covering, the cut surfaces on the tree are very susceptible to attacks of the different fungi and bacteria. There are many different methods of treating these, each being employed according to the cause of the injury.

For a clean cut surface, caused by removing a limb, ordinary whitelead paint is as good as anything, but in the case of wounds that have been caused by the removal of diseased wood, it is better to employ an antiseptic dressing such as a solution of creosote or coal tar.

The former is much to be recommended, as it penetrates into the wood tissues and remains present over a long period.

Some growers have adopted the practice of driving a few copper tacks into the wood of the exposed cut. The influence of the weather on the tacks spreads a thin film of verdigris over the wound, and the tacks will slowly corrode until they ultimately disappear.

Where this has been tried the results have given satisfaction, and in very few cases have the stubs been attacked by fungi.

Occasionally it becomes necessary to fill up a cavity in a tree caused by the wood rotting from the neglect of old cuts.

In such cases, if left, the rot will slowly permeate the whole tree, leaving a hollow shell that is likely to break at the slightest strain.

The cavity should be cleared of all dead or diseased wood, and the walls treated with creosote. A mixture of cement mortar is made with clean sand in a proportion of 1 to 3. This is tightly put into the hole and smoothed so as to conform to the outside bark, when it will set and seal the cavity.

South Australia.

Orchard Notes for Southern Districts.

August.

(C. H. Beaumont, District Hort. Instructor.)

Pruning will have been completed, or nearly so, and every effort should be made to make a good finish. Remember that big cuts need a coat of paint as a protection against the weather, and also against penetration by various diseases. Make a special point of cleaning the trees thoroughly; scrape away all loose bits of bark, or any rotten wood; fill rough parts (if possible), and so prevent fungus and insect pests from getting a start. Preventing disease is a much better proposition than trying to cure it later on.

Pruning tools should be well cleaned and sharpened before putting away. A rub with some black lead will prevent rusting.

The use of fungicides before the trees show signs of life has been proved to be good practice. The trees, being damp, help the process, but it does not do to use either dust or wet material if rain is falling. Lime sulphur and copper compounds are usually used, and both are effective.

Some insect pests are already active, especially aphids. The sooner it can be stopped the less there will be to deal with later on. Black-leaf 40, dry or wet, is the best remedy we have. Woolly aphids on the Apple needs special attention, and a treatment has been recommended several times in these columns. Every effort should be made to get the parasite into the orchard. Spraying for woolly aphids will also check red spider by drying up the eggs.

Anthraxnose of vines should be dealt with this month.

Pick off and destroy any citrus fruits affected with brown rot, and so prevent it from spreading. Wind-falls will, of course, be attended to. Do not pack damaged fruit.

Strawberry beds should be kept clean and free from weeds, and on the first appearance of mildew the plants should be lightly dusted with fine sulphur, or with lime sulphur. If plants appear to be dying off, it is well to examine the roots to find out if they are being damaged by grubs.

Badly diseased Tomato plants should be carefully removed, and may be safely disposed of by burying deeply or burning. Frequent dusting with contact insecticides may help to some extent; this should be done every fourth day. If fungus troubles are present, a fungicide must also be used.

The final ploughing should be undertaken early. Neglect of cultivation cannot be remedied.—"S.A. Journal of Agriculture."

SOUTH AUSTRALIAN FRUIT MARKETING.

New Association Launched.

The first general meeting of the South Australian Fruit Marketing Association was held at Adelaide on July 19.

The rules of this Association are comprehensive, and give ample power for the development of the trade.

The objects of the Association are to organise orchardists, fruit shippers, etc., in improved methods for handling the export trade, better grading, packing, labelling, improved transport conditions, etc.

The Secretary is Mr. E. W. Mills, Brookman Building, Grenfell-street, Adelaide.

Canned Fruit Industry.

THE draft of a contract signed by the Associated Cannery of Sydney covering the sales of Peaches and Apricots for a period of five years has been received by the representatives of three co-operative packing houses of the Murrumbidgee irrigation areas.

The prices offered are £10 per ton on rail area stations for Apricots and £9 per ton area stations for clingstone Peaches. The cannery offer to take quantities which should absorb the total Peach production, but only 250 tons of Apricots each year.

A company represented the interests of three area co-operative packing houses at Griffith, Yenda, and Yanco, is now being formed, which will sign the contract on behalf of growers, but the representatives of the three individual concerns have given the cannery assurances of the acceptance of the offer.

This contract should help to ensure fixed prices for products over a period of years, thus stabilising the fruit-growing industry.

It is thought that this new agreement will be generally beneficial, though many growers feel that the industry could be better served if an element in the Yanco area could be brought into line as regards organisation.

LEETON CANNERY.

MANY growers in the Murrumbidgee irrigation area are desirous of leasing from the Government the Leeton cannery, a State enterprise which has been running at a loss for some time.

Last year the loss on the cannery was about £48,000. Of this £28,000 represented interest alone, and growers feel that the organisation should be placed on a more satisfactory basis. The proposal is to place the cannery under the control of an Association of co-operative societies.

Some opposition is expected from the Leeton growers, who do not want any further responsibility. Others point out that the State cannot afford to continue to lose on the cannery and that the responsibility now rests with the Minister, either to get rid of the cannery to proprietary interests, or to allow it to come under the control of the growers themselves.



Specimen Australian and American Fruit Case Labels.

[Illustration by courtesy Gerrard Wire Tying Machine Co. Pty. Ltd.]

Personal and General

Visitor from New Zealand.

"Fruitgrowers Must Organise."

Mr. Walter A. Tate, of Greytown, Wellington, New Zealand, visited Australia during July. Mr. Tate is a well-known fruitgrower, specialising in Cherries. He is a member of various public bodies, and has materially assisted in forming the organisations which now represent the fruitgrowers of New Zealand. Mr. Tate has come to the Commonwealth to investigate Australian fruitgrowers' organisations and particularly with the idea of getting any useful hints regarding the development of local markets, cool storage, etc.

Mr. Tate states that large quantities of Australian Cherries are sent to New Zealand, and that such practically hold the market to the detriment of local Cherry-growers: a lessening of the importations from Australia is desired.

The varieties grown by Mr. Tate are Early Purple Guigne and Early Rivers, followed by such varieties as Early Lyons, Belle Ellen, Doncaster Seedling, Bedford's Prolific, also Windsor and Noble. It was proposed to grow the Black St. Margaret variety, and thus to have in New Zealand a variety which can hold the market against the imported Australian varieties. Mr. Tate points out that New Zealand Cherry-growers are at a disadvantage as regards freight, as it costs more to send 300 or 400 miles to the various markets than for shipping the fruit from Australia to New Zealand.

Mr. Tate further states that with regard to the export of Apples, the Control Board is doing good work. He firmly believes in the necessity for having in the Dominion a Bureau of Statistics and a Bureau of Economics in which vital details concerning every phase of the fruit industry could be compiled and made readily available, so that decisions regarding organisation could be made on sound lines, and thus enabling authoritative statistics to be placed before the growers and eliminating guess work.

Mr. Tate states that the general public has a right to expect standardised fruit, just as with every other branch of commercial commodities.

Regarding jams, Mr. Tate points out that South Africa can send jams

to New Zealand and hold the market against Australia. Doubtless the more favorable position of South Africa as regards sugar is a big factor in this connection. South Africa, however, was able to send dried Apricots to New Zealand from which Apricot jam could be manufactured in the Dominion. Mr. Tate is a firm believer in the necessity for growers to organise to protect their rights and develop their industry. "This," he states, "is the day of organisation, and fruitgrowers must not lag behind in this matter."

Mr. Tate was instrumental in opening up the South American market for New Zealand Apples. He has travelled widely in other parts of the world.

V.C.C.A. CHANGES.

Mr. B. S. B. Cook has resigned from the position of secretary and manager of the Victorian Central Citrus Association in order to become financial editor of the Melbourne "Argus."

Mr. Cook was for over 25 years on the Parliamentary reporting staff of the Melbourne "Herald," and subsequently was attached to the publicity branch of the Prime Minister's Department.

After some experience in co-operative organisation in the industrial field, Mr. Cook became secretary and then manager of the Victorian Central Citrus Association Pty. Ltd.

On July 11, Mr. Cook was tendered a complimentary dinner by the accredited agents of the V.C.C.A.

At the meeting of the V.C.C.A. Board of Directors on July 12, it was decided that pending the appointment of a person to fill the position of manager and secretary, vacant by the resignation of Mr. Cook, now commercial editor of the "Argus," Mr. A. W. Schwennessen, chairman of directors, be appointed managing-director of the V.C.C.A. and secretary of the Federal Citrus Council.

Applications are to be called for the position, and it is expected that an appointment will be made in about three months time. It was also decided to alter Mr. Kitchin-Kerr's title of market representative to manager of markets. Mr. Kerr, who was formally on the staff of the "Sunraysia Daily," Mildura, was appointed editor of the "Citrus News."

Mr. J. H. Gregory, of the Fruit Packing branch of the Department of Agriculture, severed his connection with the Department on July 19, and is taking up the duties of Fruit Packing Instructor in Queensland. Officers of the Department took the opportunity recently of congratulating him on his new appointment; of making him a presentation as a token of esteem in which he is held; and of wishing him and Mrs. Gregory a very enjoyable and successful future in their new sphere. Presentations have also been made by the children's packing classes and the Peninsula Packing Company at Somerville, in which district Mr. Gregory's family is very well known.

Mr. P. Malloch, manager, Irymple Packing Pty. Ltd., Irymple (Vic.), is shortly leaving for a visit to the Pacific Coast of U.S.A. He will spend some time in California examining the dried fruit situation there. Mr. Malloch, who is President of the Mildura Floricultural Society, was recently presented with a travelling rug and Mrs. Malloch with a suede travelling cushion.

On July 11, Mr. and Mrs. H. Winkelmann, of Campbell's Creek, Vic., celebrated their diamond wedding. Mr. Winkelmann was a pioneer fruit-grower.

We tender our congratulations to Mr. and Mrs. Winkelmann, and wish them health and prosperity.

NEWS IN BRIEF.

By striking a levy of 1-16th of a penny on every case of fruit exported from Tasmania, the State Fruit Advisory Board has now a credit balance of £1,665, after spending a substantial sum in work to benefit the industry.

A plant quarantine station is operating in N.S.W., through which new varieties of fruit, otherwise prohibited, can be imported under quarantine.

Similar provisions are urgently needed in Victoria.

Tasmania is continuing her efforts to prevent the new Apple export grading regulations from being enforced, being convinced they will be very harmful to the Island State. Tasmania contends that the alterations were made without that State having an effective voice in the matter.

Committees of selected agents are satisfactorily operating on behalf of Tasmanian growers in Sydney, Brisbane, and Melbourne.

UP-TO-DATE FRUIT PRACTICES.

Thinning, Manuring, Oiled Wraps, Graders.

Interesting Comparisons Between New Zealand, Australian and American Methods.

(By L. C. Tonkin, Otago, N.Z.)

Sex-appeal is supposed to be the chief attracting power of films and books in this year of grace, and, therefore, this article, which is composed of observations and news of interest, chiefly in connection with Apple-growing, will introduce the main item of sex-appeal—the female herself.

Eve—that splendid specimen of healthy womanhood—was mentioned at a fruitgrowers' social gathering in Wellington, N.Z., by Senor Bidone, at one time Consul-General of the Argentine. He stated that the Apple marked the chief epochs in human history.

The Apple of Eve marked the Biblical epoch, the Apple of William Tell the medieval epoch, the Apple of Newtown the scientific epoch, which gave us the law of universal gravitation. "And now," added Senor Bidone, "there is another Apple—the Apple from Nelson." This was, of course, a sly dig at the chief exporting district of New Zealand, where the growers are keen on airing their grievances and wants.

In spite of the earnest desire of the Nelson growers to tell the world they grow Apples, they have the progressiveness to keep their trees in good heart, and do not "murder" them, which expressive term was used by Mr. B. G. Goodwin (Orchard Instructor), in connection with the forcing of young trees to bear too much.

Thinning and manuring

are ways of keeping up the vitality of Apple trees, and another way is the thinning out of the spurs, or, rather, the buds, that will turn into fruit. This method of thinning, which many growers have not yet tried, seems peculiar to our Australian and N.Z. conditions.

Just as the thinning of Apples is done in leaving the fruit in doubles or singles, so are the spurs, or rather the plump buds, in our orchard of 100 acres, thinned to doubles or singles.

This seems upon first appearances very meticulous, but once it is done in the orchard beginners who have no experience of pruning have a definite basis to go upon; the buds that are retained are the survival of the fittest, and produce fine fruit; the owner has a tight rein over the bearing capacity of the tree and over the annual growth of the leaders. With

single spurs containing one plump bud we are getting fine big Newtown trees. Scarlet Nonpareil is a variety that also benefits by thinning the buds to a definite basis of two or three.

Sometimes when an orchard stunts, the grower will rashly cut back the leaders; whereas, if he does intensive and careful spur or bud thinning for a year or two he will soon get growth on stunted leaders, and also much healthier fruit: for it is on these stunted leaders that the russety Apples are carried.

The varieties that we thin to one bud are Sturmer, Delicious (here the plump bud may be on the end of a lateral), Cleopatra, Rome Beauty, Newtown, while two buds are left on Jonathan, Scarlet Nonpareil. Even this

single bud thinning

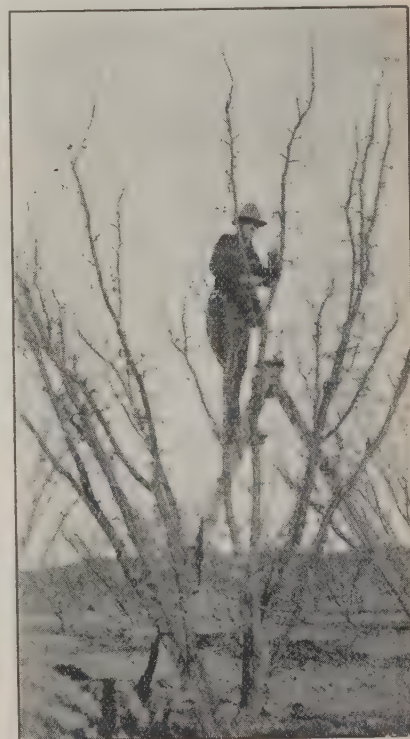
may not be drastic enough, and just as we thin our Apples and Peaches to a certain distance apart, so we may even space out our spurs at pruning time.

Of course, some growers will be afraid of such drastic thinning of buds on account of frost in spring, or on account of a poor setting, but it will be usually found that these will hardly affect most commercial orchard areas.

When Mr. L. M. Shoobridge was judging Apples at a show in Otago, N.Z., in 1917, he observed that our fruit was grown on what he called small trees. Our own tendency now is to increase the height of our trees, because the sun can get at every Apple; whereas a low, compact tree contains too many low colored fruit that will not come up to the color requirements of our extra fancy, fancy, and good grades. Mr. Shoobridge said on his return to Tasmania, "In order to get good fruit, every Apple should stand out singly."

This should be the ideal of every Apple grower, and the result will be big trees, carrying regular crops of good-colored, codlin-free, medium-sized fruit. Naturally, for export we in Australia and New Zealand practically have to grow a small-sized Apple for the English trade (size 150 to 175), and this tends to make a grower sail very close to the wind in overbearing his trees to keep the size of the fruit the medium size required.

The Pacific Coast growers of America grow very big fruit as compared with us. Quoting from a statement of prices received by Hood River growers, season 1926-27, for Ortleys (our Cleopatra), 48 per cent. of the crop were 125 per case and larger. In Spitzenberg 62 per cent. were 125 and larger, while even Newtown had 34 per cent. of this big fruit. Hood River had a Newtown crop in that season of one million



Spur pruning is necessary on trees like this.

and a quarter boxes. Just a pleasant little country town of Oregon, it seems, yet they had a crop of 2½ million boxes. The following table is interesting:—

Delicious, 57,000 boxes netted 1.09 dollars.

Newtown, 1,274,000 boxes netted .94 dollars.

Ortley, 156,000 boxes netted .80 dollars.

Spitzenberg, 641,000 boxes netted .66 dollars.

Spitzenberg growing is evidently Hood River's weak point, while the good price for Newtown is probably the result of the prices obtained on the English market, where they compete with the early arrivals of Australian and N.Z. Apples.

To the English there have come to be two kinds of Newtowns—those grown in California and those grown in the North-West (Washington and Oregon). In quest of his favorite Apple, the Englishman asks the shopkeeper merely for Californians or Oregons, and he is given his Newtowns accordingly.

It is hoped that this same Englishman will ask for Australian and New Zealand fruit when it is available.

The Americans use colored box-liners, which undoubtedly add to the look of the case, and they use oiled wraps solely, while we out here are still experimenting as to its benefits.

Some of our growers are apt to decry American practices, but when it is considered that a shed in Pehastin packs 7,500 Apple cases per 10-hour day, that

4,000,000 bushels

of Bartlett Pears (William's) are grown in California in one year, that E. S. Ryerson, Apple-grower at Dayton, Washington, obtained 30,000 packed boxes from his 60 acres, that J. B. Freet, West Side grower at Hood River, packed 9,000 boxes from his 10-acre orchard, that Robert Robinson produced 4,512 boxes from 6 acres 11 years old with the fruit averaging 113 to the box—then it can be seen efficient packing sheds are a necessity to handle such crops.

The use of belt conveyors, which can carry fruit on the level or raise it or lower it, is the latest improvement over the gravity conveyors. Good lights over the grader are necessary, and it is recommended that a rectangular shaped reflector be used over the sorting table, together with the use of blue glass globes.

Even in a small shed the grip truck will speed up packing operations.

We ourselves help our new packers by the use of a packing chart made of calico with the various packing numbers painted on.

The enclosing of the graders in a small compartment of their own is an improvement tried this year. It is an American idea, to enable the graders to be warmed by oil stoves, but we find the graders are able to concentrate on their work much better if they do not see the packers and the nailer-up. We run our packed fruit down to the basement of the

shed, and on the wooden chute we recently installed a small counter, like those used by doorkeepers at exhibitions to tally the crowds. This gives us a check on the day's output.

The use of gloves

in fruit work is an American practice that has great advantages with such work as grading, packing, stacking, and even the wiring of cases can be done quicker with gloved hands.

NO NEED TO IMPORT LEMONS.

"I can assure you that very soon there will be no need to import citrus fruit into New Zealand. Tauranga fruit is now known as the best that

NEW ZEALAND ORCHARDS.

Comments by Tasmanian.

Stationary Spray Plant.

SPEAKING at Franklin, Tasmania, recently, the Director of Agriculture, Mr. F. E. Ward, gave an interesting account of his visit to New Zealand.

In one packing shed, 21,000 cases were handled, these being the product of only two orchards. A huge "Cutler" grader was installed; the fruit was efficiently graded and well packed.

The industry was controlled by two organisations, the N.Z. Fruitgrowers' Federation and the Export Control Board. The Federation assembled the fruit at the wharves and the latter arranged the sale.



A calico sheet, with sizes marked (in background) is handy to help new packers.

can be produced, and New Zealanders are going to exercise their right to choose the best." This statement was made by Mr. B. C. Robbins, Secretary of the Tauranga Chamber of Commerce, to members of the commerce train party after they had been shown some of the Lemon groves of Tauranga. The speaker also predicted a steady growth in the other primary industries of the Bay of Plenty, and thanked the officials of the Railway Department for the helpful way in which they had treated the district. "We believe," he added, "that both you and we have tapped resources which will not only cause great growth in this district, but will also produce much greater revenue for the railways of New Zealand."—"N.Z. Smallerholder."

The Federation took 6/6 for the proceeds of the sale of the fruit, 3/6 for freight, 1/6 for charges at the New Zealand end, and 1/6 for charges at the overseas end.

Costs of production worked out at 4/4 per bushel, allowing for two cases of Apples per tree, including pruning, cultivation, manuring, spraying, thinning, picking, grading, paper, packing and carting.

At Motueka, a stationary spraying plant was inspected. This was operated by a 5-h.p. pump, with three leads of hose, which delivered 12 to 15 gallons a minute, and was said to be working very satisfactorily.

About 5 per cent. of the fruit on the wharf was inspected, cost being

paid out of the consolidated funds. So far as he was able to see the system of inspection was very efficient. The fruit was handled on the wharf during loading operations very carefully.

Mechanical contrivances

for conveying the cases from the shed to the ship's side were frequently used, and gave every satisfaction.

The clean, white cases, with their attractively-printed labels, gave a pleasing appearance to the fruit. The cases were packed with a decided bulge in the sides. This did not, as might be expected, cause bruising, but, on the other hand, as the fruit shrunk, the case contracted and took up the slack, preventing the fruit from rolling about during handling or transport.

CONTROL OF POWDERY MILDEW.

During winter pruning the burning of Apple twigs affected with powdery mildew will greatly help in keeping this fungus in check. Spraying with dritomic, atomised, or colloidal sulphur should follow. Mischable oil should be used for spraying trees infested with San Jose scale, and Apple trees infested with woolly aphis should be sprayed with tobacco wash. A good pressure is essential in order to break up the clusters of aphides.

Ploughing may be started this month. Such a ploughing puts the soil in a condition to absorb and retain the maximum amount of winter rain, and its effect is to ameliorate that of a following dry spring.

When weather interferes with outdoor work the implement and tool shed offers a wide and useful field of activity for the industrious orchardist.

CORRECTION.

The Editor, "Fruit World."

Sir,—I notice in the report of the N.S.W. Fruitgrowers' Conference, I am quoted as having promised a 10 per cent. cut on ordinary freight rates; this should read on ordinary insurance rates.

Yours, etc.,
B. C. Creswick,
Acting Representative, London and
N.E. Railway.

WANTED TO SELL.

Harvey One-way Disc Cultivator, £16; Harvey 3-Furrow M.B. Orchard Plough, Rolling Coulters, £12. Would exchange either for Harvey 2-F. disc plough. Also Doncaster Sprayer on 2-wheel transport, without engine, £35. Box 9. Horsham.

Victorian Notes

Gippsland Fruit Marketing Association

Soil Problems - Export Markets

(By F. Thomas, M.A.)

THE visit of Sir John Russell last year did much to rouse an interest in soil problems, and orchardists now realise how much help they can receive from scientists in these matters.

This accounted for the fine attendance at the second meeting of fruit-growers called by the Gippsland Fruit Marketing Association for educational purposes at the Pakenham Picture Theatre on Thursday, July 18, when Mr. F. M. Read, M., Agr., Sc., delivered an address on "The Soil of the Orchard." Mr. J. J. Ahern, Chairman of the G.F.M.A., presided. The whole fruitgrowing area from Narre Warren to Warragul was represented in the audience, which was noticeably attentive and appreciative.

Soil culture

should be based on an intelligent understanding of the physical and chemical laws involved, nor can we any longer look upon the soil as a mass of inert matter. Rather must we regard it as the home of multitudes of tiny creatures, among whom are to be found some of man's most useful allies. If we are to gain the benefit of the activities of these tiny organisms we must know something of their history and of the soil conditions favorable to their growth.

Mr. Read stressed the fact that the soil should be as far as possible neutral. It should be free from acid, and from excess of alkali. In Gippsland our soils were likely to be waterlogged and acid. We could no more expect a tree to grow well under such conditions than we should expect to find a healthy man living in a cold and damp dungeon.

If a district enjoyed heavy and regular rains, the

lime in the soil

was likely to be dissolved out and swept away, and the soil became sour. Rain water brought down carbonic acid from the atmosphere, while in the soil it was constantly being formed by the breathing of the roots of plants. If it were not removed, the roots of the plants were poisoned, and little growth could be expected.

Wet soils could be improved by drainage

and by the growth of winter crops of Peas and Beans, while the acid could be neutralised by dressings of lime.

"If a soil lacks lime," said Mr. Read, "It is a waste of time and money to add fertilisers. When you do give your orchard a dressing of lime, do it courageously. Give at least one to two tons to the acre." Referring to the population of the soil, he said that it was most important to encourage the growth of nitrogen-fixing and nitrifying bacteria in the soil. These bacteria needed air, warmth, and food. Drainage and cultivation would ensure the supply of air and warmth, and whatever helped to increase the amount of humus in the soil helped to supply food. "Remember," said Mr. Read, "that the bacteria must have oxygen. If they cannot get it from the air in the soil, they will compete with your trees for the oxygen bound up with the nitrates in your soil. Under bad soil conditions, they will fight against you."

As orchardists are now making their plans for manuring in the spring, the lecturer's remarks on fertilisers were eagerly followed.

All Australian soils were deficient in phosphates,

and superphosphates should always be applied. In his opinion, however, nitrogenous manures were the most important for the orchardist. The setting of blossom and fruit, the formation of new buds, and the keeping qualities of fruit were largely dependent on the supply of nitrogen to the tree.

1½ lb. of sulphate of ammonia, or of nitrate of soda,

And one pound of potash.

Mr. Minns, Superintendent of Markets, then addressed the growers on the proposed changes at the Victoria Market. At present there were 800 stands, but no less than 350 men were on the waiting list. The great increase in the number of motor trucks was responsible for this, and many orchardists brought their fruit fifty miles in order to market it themselves. As only about 20 per cent. of the vehicles arriving at the market were horse-drawn, it had been decided that after January, 1930, stands A, B, C, D, E should be allotted to motors, while stands K and L should

be set apart for horse-drawn waggons. He hoped that there would soon be room for all.

Mr. H. G. Colombie congratulated the Association on the fine educative work it was doing. We must have a good article before it was of any use to work out schemes of marketing. He suggested the formation of a panel of scientists and practical men to work out a programme of research, and to find ways of making known the results of the research work.

Export Markets.

He referred to the aims of the Victorian Fruit Marketing Association, which was now about to be launched, and to the recent appointment of Mr. H. W. James as Organising Secretary. In South Australia a similar Association had just been formed, which would co-operate with Victoria. The urgent need for this co-operation in drawing up a shipping programme was shown by the fact that this year, when only about 1,500,000 cases were exported from Australia, it yet happened that four ships arrived in Hamburg in one week, while in the following week six more boats carrying Australian Apples arrived, with a consequent glut in the market, and loss to all concerned. It was high time that the growers formed an Association to safeguard their interests.

In proposing a vote of thanks to the speakers, Mr. J. W. Bailey emphasised the need of building up and enriching the soil, while Mr. F. Thomas, in supporting it, referred to the need for such educational meetings. Some knowledge of the elementary laws of physics, chemistry and biology should be part of the equipment of every farmer and orchardist. Without it we were fumbling in the dark.

It is proposed to hold the next meeting in September.

Fruit Fly in Florida.—As the Mediterranean fruit fly has got a firm hold in Florida, the aim of the authorities is to secure control if eradication be not possible. Dr. A. L. Quaintance, Research Specialist of the U.S.A. Department of Agriculture, states that the damage done by insects in U.S.A. amounts to the colossal figure of \$400,000,000, and the losses will be heavier if the fruit fly is not controlled. The use of natural parasites is being increasingly resorted to in modern attempts to fight pests.

Proof Positive.

"A sensible man doubts everything. Only a fool is certain of what he says."

"Are you certain of that?"

"Positive!"—Pathfinder.

Orchard and Garden Notes for Victoria.

(By E. E. Pescott, F.L.S., Pomologist.)

The Orchard.

IF the winter spraying has been delayed, it should be completed as quickly as possible, and before the buds begin to swell and burst.

It is not advisable to spray the stone fruits with the red oil emulsion at this time, as there is danger of burning and destroying the early buds that may be swelling, and consequently loosen their outside scales.

It will be safe, if the work be done at once, to spray Apple, Pear, and Quince trees with this spray, especially where the bryobia mite, scale insects, or woolly aphids are prevalent.

If it is intended that the lime-sulphur wash be the specific for these and other pests, it may be used with safety, although the spraying should be completed as early as possible.

That the lime-sulphur is valuable as a specific against "black spot" of the Apple was shown in the report of the experiments in the "Journal of Agriculture" for August, 1918. The first spray should be given when the flower buds are more green than pink; and the second spray, when the centre flowers of the blossom cluster are pretty open.

The same report showed that a spray of 6.8.40 of copper-soda, sprayed when the earliest buds were showing pink, was a complete success against the "leaf curl" of the Peach.

When Peach aphid has appeared, it will be advisable to spray at once with a strong nicotine solution. Tobacco stems should be soaked in cold water for some days, and a teaspoonful of caustic soda added to a cask of steeping stems. The liquid should be made strong, and every endeavor made to kill out the first insects that appear. The preparations known as black-leaf 40 and nicotine sulphate are useful for this work.

Experiments carried out by the Government Entomologist in 1923 determined that red oil and nicotine sulphate mixed provided an efficient spray for woolly aphid. The mixture was made up of 1 gallon of red oil, 1 pint of nicotine sulphate, and 1 lb. soap, the latter being boiled till dissolved in 1 gallon of water. The red oil was then mixed in, and lastly the nicotine sulphate. To this was added 80 gallons of water. This provided spray material for 100 trees, at a cost of about 11/-.

The pruning of deciduous trees should be at an end this month. The pruning of evergreens, such as

Oranges, Lemons, and Guavas, may be left until later.

Young deciduous trees must be planted not later than this month. The soil should be trodden firm round the roots and when planting has been completed the tree ought to be headed back to three or four buds on each arm.

Preparation may be made for planting citrus and other evergreen trees. It is necessary that the soil be well ploughed and sweetened in anticipation of planting in September and October.

In root-borer affected districts, the beetles will begin to appear during the latter part of the month. A close observance should be kept on them and the insects regularly collected and destroyed.—"Journal of Agriculture."

FIGHTING INSECT PESTS IN THE ORCHARD.

Woolly Aphid or American Blight.

IT is advisable to spray at once with nicotine sulphate and oil. This is prepared as follows:—Nicotine sulphate, 1 pint; red oil, 1 gallon.

To prepare sufficient mixture to treat 100 trees, 1 lb. soap should be boiled in a gallon of water till dissolved; add 1 gallon of red oil and mix thoroughly; then add 1 pint of nicotine sulphate, and after mixing the whole for a few minutes, add 80 gallons of water. If the water is hard, use a small piece of washing soda.

In a few weeks' time the woolly aphid parasite (*Aphelinus mali*) will be active again, and should be placed in orchards to control this pest.

Red Spider and Bryobia Mite.

Spraying should be carried out at once to control these very destructive pests. Use red oil, Volck, or any of the light spraying oils. When leaves are commencing to show, use nicotine sulphate or black-leaf 40.

Painted Apple Moth.

See "The Fruit World," July 1, 1929, page 247.

Scale Insects.

San Jose, Olive, Apple Mussel, Brown Scale, Etc.

Spray at once with lime sulphur, red or white spraying oils, to destroy scales before young emerge. When leaves are on trees and young have hatched, use nicotine sprays.

Codlin Moth.

See "The Fruit World," July 1, 1929, page 247.

Green and Black Peach Aphids.

See "The Fruit World," July 1, 1928, page 247.

Cherry Aphids.

The Cherry aphids' eggs are exceedingly plentiful in many orchards at the present time. The trees should be thoroughly sprayed with nicotine sulphate and red oil, same quantities as recommended for woolly aphids.

SEASONAL REPORT.

In a recent report from the Department of Agriculture the following is stated:—

Deciduous Fruit.

Judging by the appearance of the fruiting wood, the deciduous fruit trees with the exception of Apricot trees, promise well for a good crop of fruit in the coming season.

Passion vines are healthy, and a normal crop should be harvested.

Berry fruits indicate a good crop.

Owing to the promise of a heavy crop of Apples, growers are pruning rather more severely than usual.

All classes of fruit have realised high prices in the overseas market.

Plums have sold particularly well.

The quantity of fresh fruits shipped to overseas markets for the year ended June 30, 1929, was very small, only 85,032 packages being shipped, whereas last year 1,024,994 packages were exported, 927,615 of these being Apples. The small shipments were, of course, due to the abnormally small crop of Apples. Tasmania and Western Australia are supplying the Apple requirements of Victoria this year. The price for this fruit varies from 12/- to 16/- per case, according to variety and quality.

Viticulture.

So far the winter is a dry one. Only 101 points of rain were registered at the Rutherglen Viticultural Station during May, and, to date, June is below the average. Anxiety is being felt in consequence in some of the wheat districts, but the shortage is as yet of little concern to vine-growers. Where tillage was adequate last season, the land is in good order for the deep ploughing so desirable in our drier districts. This work should be actively pushed forward before winter rains render the ground less satisfactory to work.

Severe frosts occurred earlier in the month, but the weather is now milder. The vines are quite defoliated and the wood has ripened under excellent conditions, which augurs well for a normal season.

In wine circles the outlook is somewhat more hopeful. The congestion in London is becoming less acute. The Wine Overseas Marketing Board has been duly elected. Though opin-

ions may differ as to its ability to remedy existing troubles, its personnel augurs well for success, and it has the best wishes of the industry.

Citriculture.

Much apprehension was felt concerning the frosts that occurred during the week of June 10 to 15. Enquiry from the Citrus Supervisors and State Rivers engineers in the citrus areas has shown that the total damage sustained is negligible. Here and there a little scorching of young tender growth has taken place, but no really serious damage to tree or fruit is reported.

The navel crop is being marketed, and the quality of the fruit this year is excellent.

VICTORIAN FRUIT MARKETING ASSOCIATION.

THE provisional committee has appointed Mr. H. W. James, Temple Court, Melbourne, hon. secretary and official organiser of the Association, who will make known to all growers the objects of the Association.

The provisional committee is purposely delaying the election of the executive committee until all growers have been given an opportunity of joining the V.F.M.A. All members will then be invited to nominate representatives for election to the executive committee.

When the nominations have been received by the hon. secretary, a list of the nominations will be posted to all members, together with ballot papers, and the result of the election will be announced at a general meeting, when the executive committee will be duly appointed, and whereat the suggested constitution will be submitted to the members for amendment or ratification.

A general discussion will also take place on such matters as are considered should receive attention for the benefit of the industry.

The majority of the exporters have now joined the V.F.M.A., the quantity exported in 1928 by these members being about five-sixths of the total quantity exported from Victoria. It is hoped that the other exporters covering the balance of one-sixth, will join at an early date.

This is considered an eminently satisfactory response in a voluntary movement, and whilst the response to date from growers is also very satisfactory, it is hoped that they will all join soon, thus bringing in the small remaining portion of shippers, and making the organisation thoroughly comprehensive. Faced with a likely heavy crop in 1930,

there is an opportunity now presented for effective organisation among growers.

ROYAL SHOW, MELBOURNE.

The Annual Show of the Royal Agricultural Society of Victoria will be held from September 19 to 28. There are numerous classes in which fruit-growers can compete.

The sections for Apples and Pears, etc., are liberal.

Citrus Exhibits.

As regards citrus, the competitive classes include the Rupert Watson collection of varieties (12 specimens of each variety), the one dozen navel Oranges, one dozen "commons," one dozen Lemons, one dozen Grapefruit, one dozen Mandarins, and an export packing competition for co-operative or association sheds. The export packing competition was won last year and also in 1926 and 1927 by the Renmark Fruitgrowers Co-op., and in 1925 by the Irymple Packing Pty. Ltd. Entries close in Melbourne on August 17 with the Secretary of the Royal Agricultural Society, Temple Court, Collins-street, Melbourne, from whom further information can be obtained. The date up to which exhibits can be staged is September 19.

CODLIN MOTH PRECAUTIONS.

Bandaging of the tree for the purpose of trapping the larvae is an important auxiliary method to spraying in the control of codlin moth. The regulations in N.S.W. require that bandages be maintained round the trunks of Apple, Pear, and Quince trees from November 15 until at least the first day of June, and removed not later than the last day of July. Care must be taken at the time of their removal to see that all larvae and pupae contained in them are destroyed.

Orchardists are also required to keep their trees free from loose bark and broken limbs, and to keep all crevices and cavities in the trees free from moth larvae and pupae. In the examination of crevices and loose bark for grubs a piece of wire will be of assistance. Though many grubs will probably be found on the trunk and crown (where the main limbs spring from), it is best when searching to follow right up along the main scaffolding branches of the tree.

COULDN'T FIND IT.

Mistress: Eliza, have you seen Miss Edith's fiancé?

Eliza (looking up from the wash-tub): No, ma'am, it ain't been in the wash yet.

Citrus News and Notes

HANDLING CITRUS FRUIT.

New Washing and Drying Machinery.

Up-to-date Plant Installed at Cobram.

THE Cobram Fruit Packing Co. has recently installed £1,000 worth of new machinery in its packing house to more effectively handle citrus fruit. The machinery is for washing or sterilising the fruit, and for drying it.

The fruit is first tipped into a soaking tank; thence same is carried by a series of rollers through specially made brushes on top of which runs a spray, and while the fruit is being carried through these brushes the water from the sprays cleanses it thoroughly. It then is directed on to a towel absorber, which taken from the fruit the big drops of water before it is carried up to the dryer. The dryer consists of eight big fans which are drawn by a 12 h.p. electric motor. The fruit thence is directed through the bottom layer of rollers in the dryer, and from there to the top layer of rollers in the same machine, after which it is conveyed by an elevator to the sorting table, and thence to the grader for packing.

The plant was manufactured and installed by the Lightning Grader Co., of Collingwood, Vic., on a carefully worked out plan. The fruit is washed and dried without being touched by hand. In addition to the washer and dryer a new polisher brusher has also been installed, which gives the fruit an excellent appearance.

A new grader

has also been installed, which means that nothing has been left undone for efficiency in the grading. Electric heaters have also been installed for use in the gas chambers.

The "Murray Valley" brand of Oranges is now well established on the markets, and under these new conditions the fruit from this district will command extra attention.

Growers in the Cobram district and those from Tocumwal (N.S.W.), and Strathmerton are using this up-to-date Cobram packing house for grading and packing their fruit.

EAT MORE CITRUS FRUIT.

UNTIL recently, we did not realise how valuable citrus fruits were for health. We now know that when we take the juice of Oranges or Lemons, it neutralises acids in the system. This neutralisation of our food residues by a balance of acid or alkali-forming foods, tends to relieve numerous and various ailments, and in some cases affords relief from rheumatic conditions.

The alkaline residue of these citrus fruits is composed of salts of potash, lime, magnesium, iron, phosphorus and silica. Thus the practice of serving Lemon with fish and meats has a real use. These fruit salts supply not only the blood itself, but also the various tissues, with their vital organic minerals. Citrus fruit contains that valuable vitamin C, which must be contained in a perfect diet. Without it our food will not do us much good. Scurvy, which at one time troubled sailors and other people, has now almost disappeared, owing to the habit of taking fresh fruit and vegetables.

A spoonful of Orange juice every day is given to all babies brought up in a modern way, and women who study their health and looks know they must take Oranges in some form or other every day.

MARKETING CITRUS FRUIT.

It is not sufficient to grow good fruit—it must be so harvested, handled, and packed that it is still good when it reaches the consumer. The rot organisms that gain access through a broken skin quickly cause decomposition. Following are some precautions (compiled by the N.S.W. Department of Agriculture), which it will pay the citrus grower to keep in mind:—

1. Clipping of the fruit is advisable, but it must be carefully done so as not to leave a stem, which in the course of a few days dries and punctures the adjacent fruit.

2. Do not drop the fruit into the picking bag, but place it carefully, and pour it carefully from picking bags to boxes. A properly designed picking bag or "apron" should be

used, which can be filled and emptied with the minimum of damage to the fruit. The boxes should be carefully examined, and all grit and protruding nails removed.

3. Do not jolt the fruit over rough roads.

4. Grade carefully for quality, and market in strict accordance with the grading regulations.

5. See that the sizing machine is working properly, and that none of the fruit is too tightly squeezed or jammed.

6. Use a good clean case.

7. Pack neatly and tightly and fairly high, thus ensuring a full case when the buyer receives it.

8. Stack cases on their sides.

A wall chart and diagram which the beginner will find helpful when packing citrus fruit is obtainable on application to the Under-Secretary, N.S.W. Department of Agriculture, Box 36a, G.P.O., Sydney.

MARKETING AMERICAN CITRUS IN EUROPE.

The "Sunkist" System.

THE subjects of organisation among fruitgrowers and the marketing of the crops are always of interest.

Information has been published from time to time regarding the California Fruitgrowers' Exchange ("Sunkist" Oranges) in relation to their local organisations and sales methods in U.S.A.

The following notes, however, describe briefly the method of marketing "Sunkist" Oranges in England:—

All the fruit is consigned to the representative, Mr. S. B. Moomaw, of Covent Garden, London, who controls the sale through selected brokers and agents in various parts of England and the Continent. In 1927 the fruit thus controlled by Mr. Moomaw amounted to five-sevenths of all the citrus shipped from the United States to Europe.

This "Sunkist" representative is not a broker or fruit salesman: he is the distributor, and he places the fruit for sale with selected agents. The different markets are "rationed," each receiving only the quantities and sizes which it is estimated to absorb at satisfactory prices. Fruit can be diverted at any time to markets in the United Kingdom or Europe.

PUBLICITY FOR ORANGES.

A poster containing the following couplet is prominently displayed by the Victorian Railways Department:—

"The peel is but the color scheme;
The juice itself's the gold."

EMBARGO ON CITRUS FRUITS.

Mr. B. A. Reddall, of Somersby, via Gosford, has written to the press, requesting that an embargo be placed on citrus fruits from U.S.A. and Italy. Mr. Reddall further states that the growers, on top of over-production, have been faced with the dumping of American and Italian citrus fruits. He states that the citrus industry here is firmly established, producing good fruit, and that importations are not wanted.

AMERICAN CITRUS FRUIT.

A recent survey by the U.S.A. Bureau of Agricultural Economics of the citrus fruit production prospects in California and Florida indicates an increase in bearing acreage in the next few years. In California the bearing acreage of Oranges for 1928 is estimated at 187,000 acres, while that forecasted for 1931 is 192,000. This increase will consist, in the main, of Valencias. With Grapefruit, California in 1928 is estimated to have had a bearing acreage of 7,800, and 10,200 bearing acres are forecast for 1931. Florida has a total Grapefruit acreage estimated at 80,000 acres; approximately 93 per cent. of these are bearing trees, and, as many trees now bearing have not reached their maximum yield, an increase in production is confidently expected.

The bearing acreage of Lemons, practically confined to California as far as the United States are concerned, has not changed greatly since 1921, and at present shows a slight downward trend; though it is stated that if the prices of Sicilian Lemons and by-products remain at their present level or rise it is only a question of time before California's production increases.

The export of Grapefruit to England from the U.S.A. is apparently on the increase, the liberal supplies and low prices bringing the fruit into many homes where it had not been previously used, and so tending to stimulate future consumption. The exports of Oranges to Great Britain, however, in 1928, 150,000 boxes, were less than in 1927, largely owing to the favorable market situation in the U.S.A., though the figures of the British imports of Oranges from Brazil are significant, increasing from 28,000 boxes in 1927 to 130,000 in 1928.—"The Fruitgrower," London.

The Brogdex System for Citrus.—Information is to hand from the Brogdex Company, Los Angeles, Calif., stating that a total of fifty-six pack-

ing houses in California were now in the ranks of its licensees. There is also a list of packing houses which have recently joined the list. They state that seven million boxes of citrus fruit, each box being treated with the Brogdex processes, should be shipped to the markets of the world.

The Brogdex Company states that it now holds more than fifty American and foreign patents. Among the latest of these patents are the most valuable ones in the protection of packing houses using the company's processes.

THE PORT OF MANCHESTER.

IMPORTANT IMPROVEMENTS in cargo handling, bunkering arrangements, etc., were completed at Manchester last year, and the ship canal deepened to 30 feet for four miles at the seaward end, thereby providing facilities for steamers to lighten or discharge cargo and complete outward loading without incurring charges at any other port.

Capt. W. J. Wade (representing the Manchester Ship Canal Co.), of 8 Bridge-street, Sydney, has sent a copy of the chairman's report at the recent annual meeting of shareholders at Manchester, which contains much useful data in support of the greater use of this port by Australian and N.Z. shippers.

"FRUIT WORLD" APPRECIATED.

The Editor, "Fruit World."

Sir,—I may state, that although an old man, hoping shortly to pass my 88th milestone, I enjoy reading the "Fruit World" as soon as it comes every month. It is so instructive to men who, like myself, have small gardens and orchard.—(Signed) W. Sandford, Eastwood, N.S.W.

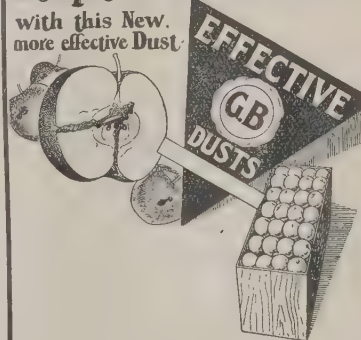
Major H. Dakin, the Australian agent for Geo. Monro Ltd., Covent Garden, London, W.C.2, has forwarded to us information received from London re condition and prices of Tasmanian Pears upon arrival in London.

Bendigo Show.—The schedule of the annual Show of the Bendigo Agricultural, Horticultural and Pastoral Society to be held on October 8, 9, and 10, is a comprehensive one. Copies may be obtained from the Secretary, E. G. Ham, Victoria Chambers, Pall Mall, Bendigo. There are sections for citrus fruits, Apples, vegetables, etc.

DUSTING

Stop the Profit Eaters

with this New.
more effective Dust.



The quickest, surest way to control Codlin in Apples and Pears, other insects attacking fruit and vegetables and to prevent fungous diseases of Trees, Vines and Vegetables, is found in the new G.B. Dusts.

Effective G.B. Dusts for cleaner, more profitable crops.

They are best applied with a Niagara hand or power Duster

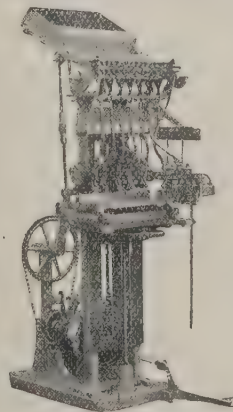
Write us, or see our nearest agent, for details of the right G.B. Dust for your use. Information supplied with pleasure.

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Improving Fruit Trees.

Bud and Stock Selection.

Important Work is being Done by the N.S.W. Department of Agriculture
They also have a Plant Quarantine Station.

IN order to bring about needed cultural improvements in the fruit industry, the N.S.W. Department of Agriculture is doing some very valuable work, details of which will be appreciated by readers. The information is kindly supplied by Mr. C. G. Savage, Director of Fruit Culture, as follows:—

The N.S.W. Department of Agriculture has a fairly extensive programme in relation to bud selection; at the present time the outstanding work in this connection is being carried on with citrus trees, though some work is also being done with Apples and Pears.

With the latter fruit the outstanding necessity appears to be the evolving of a type of canning Pear desired by the canners. It may be stated that there are several types of Williams Pears, some of which are very rough in outline, and consequently are not desirable types for canning purposes.

Citrus.—The inspectors located in citrus-growing districts have been asked to report on trees bearing the desired type of fruit. From these the Co-operative Bud Society again select trees in conjunction with the special citrus instructor of the Agricultural Department, from which buds are to be purchased, and in turn the buds are sold to nurserymen.

The fruit instructors and inspectors have also been asked to keep records in selected orchards for a period of four years with Washington Navel and Valencia Late Oranges, Lisbon and Sweet Rind Lemons, Emperor Mandarin and Grapefruit. These officers are supplied with record books in which entries are to be made from year to year, reporting data in relation to the cropping habits, characteristics of the fruit in regard to quality and shape, the tendency of the fruit to vary in type on the respective trees and also in regard to the growth of the tree. From these records, after four years, the Department will be in a position to intimate where trees of the types of these various varieties are located from which buds might be obtained.

In addition, the Department is recording in its experiment orchards the actual returns from trees. Specially

selected buds are being taken from the most desirable types which are being worked on to stocks from which further selections will be made, from these further selections will follow, until we are in a position to supply so-called "pedigreed" buds. This process, of course, must be a somewhat very slow operation.

The Department, in addition to endeavoring to improve citrus varieties by selection, is also attempting to evolve new varieties by cross-fertilisation.

Stock Experiments.—This question opens up a vast field for experimental investigation, and it is believed that many disorders now apparent in various fruits may be due to incompatibility between stock and scion. Investigations are now in hand, and trees are being raised at our Narara Viticultural Nursery, where an area has recently been granted for fruit tree nursery work. Experimental work now in hand includes trials with various citrus, pome and stone fruit stocks. The trials will include experiments with the seedlings of various species, many of the seedlings being propagated from seed which has been specially raised by self and cross fertilisation methods by the plant breeding branch of the Department, also from seed imported from other countries. In addition, stocks are being propagated by various vegetative methods, and varieties are being worked by various methods.

The Department is importing many varieties of citrus, pome, stone and small fruits. These are planted under quarantine conditions for a period of 12 months. These conditions embody the following:—

"The plants must be accompanied by a certificate signed by an officer of the Department of Agriculture from which the plants are exported, stating that they are free from both pest and disease. On arrival in this State they are at once fumigated with hydrocyanic gas, in order to destroy any insects that may be present upon them, then they are passed through a fungicide bath to destroy any fungus spores which may be adhering to the plants. They are then

grown in pots in an insect-proof glasshouse for from two to three months after which time they are transferred to an insectary, which is covered with very fine mesh insect-proof gauze. During the period of quarantine the trees are under the close observation of the Biologist and Entomologist, whose reports are necessary, stating that the trees are free from disease or pest, before they can be released. On release, buds are taken and propagated. After sufficient buds have been obtained, the plants are then burned."

BUD SELECTION.

Very Important for Deciduous Trees.

Bud Sports Superior to Parent Forms.

Studies in U.S.A. with Apples, Pears, Plums, Cherries, and Peaches.

FOR many years, there has been much discussion of the bud-selection question. Much of this discussion has been based on theoretical considerations. The desirability of a careful, comprehensive field study, supplemented by propagation tests is obvious. Such a study was begun by the Horticultural Department of the Michigan Experiment Station a number of years ago.

During the last several years, the study has been greatly aided by the co-operation of Mr. Roy Gibson, the Greening Nursery Company, of Monroe, who, through long intimate acquaintance with literally thousands of commercial fruit plantations in Michigan, has had exceptional opportunities to note the occurrence of bud sports.

As a part of this study, an attempt has been made to locate as many bud sports or alleged bud sports as possible. Each one has been marked, carefully described, revisited a number of times to check on the permanency of its characteristics; and photographs and other suitable records have been made. Such historical data as were available have been obtained.

Whenever possible, scions were taken from the sport and from the parent form. The resulting trees or top grafts are being grown under conditions which put to the test the degree to which the supposed sport propagates true. In a few cases, data have been obtained on the results of such propagation tests, which were begun some years earlier by the owners of the sporting forms. The investigation is only just begun and it will be a number of years before it will be possible to issue a final report.

Nevertheless, the records that are available warrant the following statements that will be of interest to fruit growers:—

Bud sports of deciduous fruits are of fairly common occurrence; and, in this study, over 100 such sports have already been located and described and are being put to propagation tests.

Among the more interesting and important types of sporting that have been noted are: russet-fruited varieties of Apples, Pears, and Crab-Apples; color variations, from the striped to solid color form or vice versa, in Apples, Pears, Plums, and Cherries; late or early ripening forms of Cherries and Peaches; large fruited or giant forms of Apples; semi-barren or unproductive forms; variations in shape of fruit; and variations in length of internode, size of leaves, and the general growth habit and other vegetable characteristics of trees.

Scions from some of these sports, which show variations in season of maturity, productivity, and in color markings, have been growing long enough to demonstrate that they transmit these characteristics when propagated vegetatively.

Thus a late-ripening and at the same time shy-producing strain of the South Haven Peach which originated as a bud sport on the grounds of the South Haven experimental sub-station has been propagated vegetatively and has "bred" true in this test.

Similarly, there are a number of bearing trees of a russet-fruited Bartlett Pear that were propagated by a grower from a bud sport on one of his trees. To what extent the many other sports that are under propagation test will similarly "breed" true cannot be foretold.

A few of these sports would be classed horticulturally as superior to the parent forms from which they have sprung. A larger number would be classed as inferior or degenerate forms. From both the academic and the practical standpoints, the one

group is as interesting and as important as the other. Though exact data are not available as to the relative frequency of bud sports in deciduous fruits or as to the percentage of trees that are likely to constitute departures from type when no special attention is given to the matter in the cutting of scions, the evidence indicates that the question is of some

practical as well as academic interest.

Fruit growers who have noticed what appear to be bud sports in their orchards, whether of an apparently desirable or an undesirable type, are urged to direct attention to them, so that they may be examined and studied.

Western Australia.

WEST AUSTRALIAN CITRUS ASSOCIATION.

AT a meeting of W.A. citrus fruitgrowers, a West Australian Citrus Association was formed, with Mr. A. C. R. Loaring as President. A provisional committee, with the power to co-opt up to three additional members, was appointed. Mr. S. V. Evans was elected Secretary.

The committee will meet at regular intervals, and it has been recommended to give special attention to the marketing and advertising of citrus fruits and to the pathological problems that confront growers. The need for the appointment of a citrus fruit expert to represent the Department of Agriculture was stressed.

Mr. R. S. Sampson, M.L.A., outlined the methods of fruit marketing employed in California, and said that the State of perfection in production and their marketing ability had enabled them to secure the N.Z. markets which should, legitimately be supplied by Australia.

Seasonable Orchard Notes for August.

(By Geo. W. Wickens, Superintendent of Horticulture.)

PRUNING AND PLANTING deciduous trees should be completed by the end of this month, and wherever the soil is dry enough, spring ploughing should be in full swing. The second winter spraying for San Jose scale should be completed before the 31st on all trees where the buds are forward. Late blooming kinds, like Rome Beauty and London Pippin Apples, may be left until about September 7.

Where old Apple and Pear trees require working over to other varieties, the necessary scions should be secured early in this month from trees thoroughly dormant, and buried

in soil in a cool place to retard bursting of the buds.

Orange aphid will appear about the end of this month, and where the insects are sufficiently numerous to damage the young shoots, they should be sprayed with black-leaf 40 and soap, using 1 lb. black-leaf 40 and 3 lb. soap in 80 gallons of water.

Carefully examine ripening Loquats for traces of fruit fly, and destroy these with any Oranges or Mandarins found to be infested.

Continue trapping for fruit flies, and examine, cleanse and replenish traps as often as required.

FRUIT COOL STORES.

The Westralian Farmers Ltd., grain handlers and fruit exporters, announce their facilities for handling and shipping of fresh fruit, as the company owns cool stores at the ports of shipment, Fremantle and Albany. They also have cool stores at Bridgetown.

The cool store at Albany holds 11,000 cases, and the company has recently taken over the cool store previously owned by Messrs. H. J. and F. Simper Ltd., at Fremantle. The company's store at Bridgetown, when full, holds 22,000 cases.

W.A. FRUIT EXPORT.

Mr. Geo. W. Wickens, Superintendent of Horticulture, Department of Agriculture, Perth, W.A., has forwarded information as follows:—

The total export of fresh fruit from Western Australia for the year ending June 30, 1929, was 737,676 cases. The bulk figures were:—Apples, 654,982; Pears, 30,474; Grapes, 48,683.

Hamburg received 344,718 cases of Apples and 8,588 cases of Pears; London, 130,051 cases of Apples, and 19,964 cases of Pears. Hull received 17,113 cases of Apples; Liverpool, 14,852 cases of Apples and 178 cases of Pears; Glasgow, 10,485 cases of Apples and 107 cases of Pears.

AN IMPORTANT CONTRIBUTION TO THE SPRAY INDUSTRY

The New Spreader "FLUXIT"

[Instantly Soluble]

No Fruit Grower can afford to be without "FLUXIT" in his Spray

No spray is the most efficient scientific spray until the spray water is transformed into a colloidal solution. This is accomplished with "FLUXIT." It "Makes every spray a better spray," at the cost of a few pence per tank.

- "FLUXIT"— makes a perfect spray, wets thoroughly, spreads uniformly, and clings to the surface.
- "FLUXIT"— Makes the standard amounts of arsenate used in sprays, much more efficient to kill.
- "FLUXIT"— will give better results with one half pound than the one pound of obsolete spreaders did before, in arsenate sprays.
- "FLUXIT"— fluxes the spray material to the sprayed surface. It makes the spray go further.
- "FLUXIT"— makes any spray or combination of sprays safer to use.
- "FLUXIT"— gives Nicotine, Lime-sulphur, and Bordeaux sprays a thicker film. It wets better and stays longer. It makes the Nicotine Sulphate more efficient to kill.
- "FLUXIT"— when used with white (summer) oil and arsenate of lead, in combination, makes a much more effective spray than arsenate of lead alone.
- "FLUXIT"— is recommended for use with all white oils.
- "FLUXIT"— largely prevents russetting of fruit with Bordeaux sprays.
- "FLUXIT"— makes the spray wet as it hits—spread as it wets—and stay where it is put.

"FLUXIT"

is a scientific product, prepared from strictly high quality materials, and packed while fresh and keeps in that condition until used. Chemical tests have shown that "FLUXIT" has not deteriorated after 3 years in its original containers.

There is no "FLUXIT" substitute for

"FLUXIT" is not a calcium caseinate. The latter was proved to be deficient three years ago. "FLUXIT" is the only spreader which makes improvement from year to year, and is the result of years of research to make spreader conform to what it should be. A material that will deposit twice the amount of lead and remove it easier than any other spreader or obsolete calcium caseinate. "FLUXIT" is prepared so as to cause every kind of standard spray material to become more efficient.

Manufactured by— COLLOIDAL PRODUCTS CORPORATION, San Francisco, U.S.A.

Australia Agents—

Lawford's Fruit Exchange Pty. Ltd.
DONCASTER, VICTORIA

Growers! Write for Full Information, Agents Wanted in all States where not represented.

Other figures received are:—Colombo, 9,716; Singapore, 17,972; Sourabaya, 10,483; Batavia, 3,314; Port Said, 5,221; Rotterdam, 30,718; Gothenburg, 9,797; Dunkirk, 327; Stockholm, 50,190; Mauritius, 150; Antwerp, 610; Durban, 900. These figures are mostly Apples, a few cases of Pears being included.

Vintage operations have been carried out under favorable climatic conditions. Densities have been fair in nearly all districts, but not as high as last year. The quality of the Grapes is good, clean and sound, there being an absence of fungoid diseases.

Dried fruit, Sultanas and Lexias benefited by good drying conditions, and the class of fruit is commercially good.

Ship Your Oranges, Lemons, Grapes to New Zealand

All consignments for this market will have careful attention and realize highest prices if sent to

The Co-operative Fruitgrowers of Otago Limited, Dunedin

Personal supervision of every consignment.

Cheques posted promptly.

Drop us a Line or Cable
"Peachbloom," Dunedin.

The quantity of fruit exported this year is a record for the State, as from January 1 to April 18, 1929, 648,3754 cases have been sent away.

In spite of the heavy Apple crop, good quality fruit right through the month has realised payable prices on the local market; in fact, prime fruit of all kinds has sold well.

During April the weather conditions were dry, and this aided materially in finishing off the dried fruit pack.

Wines made in different country districts were tasted, and were found to be clean and healthy, but lacked the fullness of last year's vintage.

Do nothing by halves; if it be right, do it boldly; if it be wrong, leave it undone.

ITEMS OF INTEREST.

Correspondents' Views.

APPLE EXPORT REGULATIONS.

Letter from South Australia.

A letter is to hand from W. Robert Gray, Kersbrook, South Australia, commenting on a report from Tasmania in which the new Apple export grading regulations are criticised.

After comparing the quoted prices for "plain" grade, Mr. Gray continues:—

I would reiterate my remarks in my last article on this subject, more particularly as at present there is talk of inter-Empire reciprocity of trade. The British mechanic has a world-wide reputation for thoroughness which we appreciate; let us then in turn send nothing but our best.

"ABOLISH THE SUGAR EMBARGO."

Resolution at Victorian Chamber of Agriculture Conference.

At the recent Conference of the Victoria Chamber of Agriculture, held at Warragul, consideration was given to the sugar question, as it affected the fruitgrowing industry generally, and it was resolved, on the motion of Mr. W. A. Webb (Doncaster), seconded by Mr. G. Fankhauser (Fruitgrowers' Association), that, in view of the unsatisfactory state of the fruitgrowing industry, the Federal Government be requested to abolish the embargo against the importation of sugar.

AUSTRALIAN CONFERENCE OF FRUITGROWERS.

Hobart, Autumn, 1930.

IN connection with the all-Australian Fruit Show at Hobart in the coming autumn, there will be a session of the Australian Conference of Fruitgrowers.

It had been previously arranged for the Conference to be held in Brisbane; however, the President, Mr. W. Ranger, has waived the privilege, and has agreed that the Conference be held at Hobart in conjunction with the Tasmanian Committee.

This ready acquiescence on the part of Mr. Ranger and the Queensland Committee of Direction of Fruit Marketing will be appreciated by all interested, and all plans will now be completed for this important function.

The Executives of Fruitgrowers' Associations in the several States are invited to send in items for the agenda paper to the Hon. Secretary, Mr. R. E. Boardman, c/o "The Fruit World," Box 1944, G.P.O., Melbourne.

Growers are urged to keep the time available to make the trip to Hobart next autumn (probably May), in order that there shall be a representative gathering, and that the spirit which animated former conferences may be revived.

SUPPORT CO-OPERATION

By Consigning your
FRUIT to the

Producers' Distributing Society Ltd.

(Late Coastal Farmers' Co-operative
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Agents for

"BLACK LEAF 40"
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Melbourne	Sydney
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IMPERIAL FRUIT SHOW.

The annual Imperial Fruit Show will be held at Birmingham in October. The schedule is a comprehensive one, and in several classes Australia should compete. Copies of the schedule are obtainable from the Department of Markets and Transport, 527 Collins-street, Melbourne.

BREMEN, GERMANY.

Interesting information and photographs are to hand from Fruchthandel-Gesellschaft Scipio and Fischer, Fruchthof, Bremen, Germany. Total turnover figures for Oranges, Lemons, Apples, Onions, and Bananas are given.

N. Z. Fruitgrowers' Federation

Important Annual Conference.

THE 13th Annual Conference of the N.Z. Fruitgrowers' Federation was held at Wellington on July 3. There was a full attendance of delegates, and the proceedings were animated.

A civic welcome was tendered by the Mayor: the Hon. H. Atmore spoke on behalf of the Government: twelve members of Parliament were present, also Mr. J. A. Campbell, Director of Horticulture, and his staff from all districts.

In opening the Conference, the President (Mr. T. C. Brash) said the export season had been satisfactory; research work was progressing; overseas markets were expanding: the quality of N.Z. fruit and the general excellence of the packing and grading had proved effective.

Annual Report.

Included in the annual report the following was stated:—The Trading Department was satisfactory: there was an increase of 33 1-3 per cent. on the previous year's local trading. The turnover has been increased by £34,863/0/4. The Board had established branch offices. The year resulted in a net profit of £4,105/8/8. During the year there has been an export of 1,000,000 cases. The orchard tax had yielded £1,328/9/4, an increase of £633 over last year. The accumulated capital of the Federation now stood at £13,932.

Fireblight Tax.—Under the 1927 Orchard Tax Act, power was given to fruit districts to set up "Fireblight" Committees with power to make a levy of up to 5/- per acre. The introduction of this tax should help considerably in the South Island, where an outbreak of Fireblight was reported.

Local marketing was a most important item, and a special Committee was studying the matter.

Conference Resolutions.

In dealing with legislative matters, Conference requested the Government to foster the present system of compulsory co-operation: to give Otago the opportunity of voting re entering control: that imported fruit offered for sale reveal the country of origin: various increases in tariff on imported fruits was requested.

Matters affecting the Department of Agriculture included requests to appoint an entomologist, to investigate silver blight, to seek a parasite for the borer attacking citrus and other fruit trees; to investigate the

russetting of Delicious Apples: that spraying materials be sold on a guaranteed analysis: that the Department investigate the various forms of precipitated sulphur, and that the Government be asked to subsidise the first ten tons of Apricots dried in N.Z.

Fruit Importations.—Resolutions were carried favoring an increased duty on imported jams and canned fruits which could be manufactured in

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Specialists in Australian Fruit.

Solicit consignments of Apples, Pears, Etc.

Our record of over 30 years' standing in the handling of Australian fruit, with satisfactory results, is a recommendation for growers to ship their fruit to our house.

Representatives—

International Fruit & Mercantile
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Murdoch Bros., and A. J. Walshe &
Co., Hobart, Tasmania.

N.Z.: that a substantial duty be imposed on all stone fruit pulp imported; a tariff on imported Raspberry pulp and juice; that an adequate duty be imposed on dried Apricots imported from S. Africa; that the duty on imported Cherries be increased to the equivalent of the difference in price received for the N.Z. early (or soft) Cherry and the price received for the Australian, including the Tasmanian

late (or hard) Cherry, which comes on the market in direct opposition to local productions; that protective duties be placed on imported dried fruits, canned fruits and Cherries.

Various matters relating to the constitution of the Federation, export items, including wiring, labels, grades, regulations, also shipping, inspection, and markets, were dealt with.

There were several resolutions carried relative to the Pear industry, it being deemed necessary to develop the export trade in view of the large supplies on the local market.

Export Control.—It was decided by resolution "that this Conference of growers, representing the whole of the exporting districts under control, confirms the action of the Control Board to prevent the export business passing into private interests, and also confirms our objection to the attempts made by certain business firms to wreck our organisation."

The value of research and scientific adaptation was evident in the interest taken in the address of the Minister for Agriculture and the lectures by scientists from Cawthron Institute and Massey College.

Dealing with pests, cool storage problems, reference was made to the root stock problems and the need for a definite plant research station backed up by local experimental areas. It is felt that the time was coming when this must receive more attention than has been assigned to it in the past.

Reference was made to the bud selection work on citrus and Apricots being conducted under the auspices of the Institute of Horticulture with the co-operation and assistance of the growers, and the Scientific and Industrial Department.

Office-bearers were elected as follows:—Directors, Messrs. T. C. Brash (Nelson), F. W. Cone (Christchurch), J. Dicker (Nelson), A. M. Robertson (Hawkes Bay), W. J. Rodger (Auckland), T. H. Torode (Blenheim), W. A. Tate (Wellington), H. Turner (Otago). The General Secretary, Mr. H. F. Napier.

Presentation to Mr. H. Stratton Izard.

Mr. Izard, who has for the last seven years been the Auckland Director on the Fruitgrowers' Federation Board, was the recipient of a tobacco pouch and case of pipes at the Annual Conference of the Auckland Fruitgrowers this month. Mr. Izard is not contesting the office of Director again.

Presentation to Mr. S. F. Pope.

The occasion of the annual dinner of the N.Z. Fruitgrowers' Federation was taken to present Mr. F. S. Pope, the popular ex-Assistant Director-General of Education, with an address

and a suitable memento of his long association and great services to the fruitgrowers, first when Secretary to the Department of Agriculture, and lately as Assistant Director.

Most appreciative remarks were made by the President and other members of the Conference. Mr. Pope suitably responded.

Deputation to Government.

An influential deputation waited on the Ministers for Agriculture and Customs, and presented the resolutions carried, which required the attention of the Government. Arguments were advanced in favor of the growers' requests, and careful consideration was promised by the Ministers concerned.

Queensland

BANANA RIPENING.

Important New Methods.

THE Home Secretary for Queensland (Mr. C. Peterson), the Director of the Queensland Government Intelligence and Tourist Bureau (Mr. P. J. Nally), and others interested in the marketing of Australian-grown Bananas, paid a visit to the B.P.B. Co.'s depot to inspect a ripening process patented in America and Australia by Mr. R. J. Broadbent. Mr. Broadbent was for many years with the well-known Elders & Fyffes Banana distribution organisation in England.

This new process is described as revolutionary: it can be installed at £1,200: is as near as possible a substitute for nature. Vapor is distributed among the Bananas by means of a "vaporiser," and at the same time the chamber is cooled by a stream of pure air. In the first stage the Bananas, packed in cases, are brought to an even, low temperature, so that they will ripen at the same time, and have the same rich color. The second stage is a repetition of the first, and the third is somewhat similar, all having their basis on the distribution of hygienic air, which is absorbed by

the fruit. The whole process of ripening takes three or four days in summer, and five or six in winter.

Bananas ripened in this manner have a healthy golden appearance, and on being broken show a white milky flesh, unmarred by dark patches and black core. The flavor is retained to a remarkable degree.

Mr. Peterson sampled several specimens and declared himself favorably impressed: there was no reason why all complaints regarding Queensland Bananas should not be ended.

H. WILSON

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Consignment shipments solicited
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out England and Continent.

NEW SPRAY SPREADER.

Fruitgrowers are interested in all scientific developments which can improve their industry. In regard to spray spreaders, a new preparation has come on the market which has created interest. This new preparation is called Fluxit, and is manufactured by the Colloidal Products Corporation, San Francisco, California.

The manufacturers state that the Fluxit causes the spray to cling loosely, making the residue readily removable, while still maintaining maximum control against codlin moth. Wind or rain cannot remove it. This new principle is stated to eliminate use of lime in all lead sprays. Fluxit is stated to add greatly to the protective qualities of all sprays, and that it more than doubles the amount of spray coverage ordinarily obtained, and causes little or no foam in the spray tank. It is further stated that this new preparation largely prevents the russetting of fruits caused by Bordeaux mixture and also prevents the curdling of the lead when used with oil.

The Colloidal Products Corporation write as follows:—

"We have made some interesting determinations with lime-sulphur sprays, used with and without Fluxit, and we find that the oxidation of the sulphur, which is the active ingredient, as a scalcicide for San Jose scale and other scales, is much less when Fluxit is used than without. This shows that with one pound of Fluxit per one hundred gallons of spray material, and tested after one quarter of an hour and at intervals of sixty-six hours, the ratio of oxidation was from ten to twenty-five per cent. less when Fluxit was used."

Information and supplies are obtainable from Lawford's Fruit Exchange Pty. Ltd., Doncaster, Vic.

Do not run any Financial Risk with your Fruit
but Consign it to

Telegraphic Address:
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SELECTED AGENT FOR:

Victoria: Harcourt Fruitgrowers' Progress Assn. Ltd.
Harcourt Fruit Supply Co. Ltd.
Victorian Central Citrus Assn. Ltd.

Tasmania: State Fruit Advisory Board.
New South Wales: N.S.W. Central Citrus Assn. Ltd.
Batlow Packing House Co-op. Soc. Ltd.

The Sugar Agreement.

Crippling Effect on Fruitgrowers.

Address by Mr. R. E. Boardman.

AT a largely attended meeting of fruitgrowers at Harcourt on June 17, Mr. R. E. Boardman, editor of the "Fruit World," gave an address dealing with the crippling effect of the sugar agreement on the fruit industry.

Mr. J. H. Lang (Harcourt) presided. Included in the audience were Col. Hurry, M.H.R., Senator Lawson, and Mr. H. Keck, M.L.C.

In introducing the speaker, the Chairman stated that fruitgrowers had for years protested against the unfair incidence of the sugar agreement.

Mr. Boardman said there were several serious economic factors operating to the detriment of Australia—the effect of the Federal Arbitration Act, a tariff which had been declared unscientific, break of gauge on the railways, the undue expansion of Governmental activities in the realm of business, and the sugar agreement. An economist giving evidence recently at a public enquiry stated the sugar and butter industries cost Australia £12,000,000 per annum.

Australia was caught in a period of economic depression because of hothouse methods, particularly under Government auspices in an attempt to develop this island continent. The socialised sugar industry had placed a heavy burden upon the community in general and the fruit-growers in particular. The Plum-growing industry was rapidly declining. Plum trees are being grubbed out, due primarily to the preferential treatment by the Government to the sugar industry.

The consumption of jam was steadily declining. In 1912, when the population was 4,700,000, Australia consumed nearly 86,000,000 lbs. weight of jam. Fifteen years later, when the population had increased to 6½ millions, the consumption of jam was under 85 million pounds weight.

In other words, the per capita consumption in 1912 was 18 lbs. per annum, and in 1927-28 the per capita consumption was only 13 lbs. per head, a decrease of 5 lbs. per head of population. Had we remained at the 1912 standard there would have been an increased consumption last year of nearly 32 million pounds weight of jam.

These were startling figures, which must arrest the attention of the industry and the public generally. The figures just quoted applied alone to

factory jam, of which definite statistics were available. But the loss was greater still. The Federal President of the Housewives' Association recently stated, after careful research, that the housewives were making less jam than ever, principally because of the high price of sugar. Yet the Colonial Sugar Refining Company revealed profits at the rate of £1,000,000 per annum.

Cooksley & Co.

(W. P. COOKSLEY)

Reliable Fruit Agents

Over 50 Years Experience

TRY THEM!

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PARSONS & JAKES
Manufacturing Chemists

6 Patterson Street } Abbotsford, Vic.
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N. L. HOPKINS, HOBART

It had been stated by Queensland sugar producers that as the per capita consumption of sugar was increasing it was fair to assume that a proportion of this was made in home-made jam, which to that extent would account for the falling off in the factory-made jam. The statement, however was not borne out by practical experience, and the increase in the consumption of sugar must be due to the use of that product in commodities other than jam.

Meanwhile the sugar industry under Government patronage had greatly expanded. The Commonwealth Year Book stated as follows:—

"The assistance given by the Commonwealth and State Governments during recent years has greatly benefited the sugar industry: the area cultivated in Queensland has increased from 162,000 acres in 1921 to 266,000 in 1926, an increase of over 100,000 acres, and the number of cane farmers in the same period increased from 3,900 to 6,600, or an increase of 2,678 in the six years."

To what extent this increase is healthy was open to question. Some industries had been built up under the shelter of the tariff wall, but the sugar industry had enjoyed an absolute embargo for 14 years.

The British Economic Mission dealt with some aspects of this matter when they stated:

"Protection, as its very name implies, is designed for the weak, and the weakness may be that of infancy, temporary ailment, or inefficiency. It may well be expedient to give artificial assistance from the public to a promising infant industry, preferably by way of bounty, the cost of which can be exactly measured, than by way of a protective Customs duty which will raise, to an extent difficult to compute, the cost to the community. But infant industries are apt to take a long time to grow up and to be ready to dispense with their swaddling clothes.

"The protection of the inefficient is something which no one would defend; dependence on Government is promoted and Governments exposed to political pressure are prone to give assistance. The policy of protection has been unscientifically carried out and the tariff burden has reached the economic limit."

The foregoing were general statements, but Sir Arthur Duckham, leader of the Economic Mission, came right down to definite details when he wrote as follows:—

"I do not wish to preach to Australia, but there are some matters on which I hold strong views. There is too much overlapping in production. In Queensland I found there were too many sugar mills. Ten could do the

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work of thirty, and do it at less expense. In production, especially with those commodities with which Australia must compete on the world's market, the outstanding thing is to improve output and at the same time to reduce costs."

In 1913-1914 the quantity of sugar produced was 161,000 tons; ten years later (in 1924) the quantity was 306,000 tons, and in 1928, 500,000 tons.

The greater the production, the greater the loss.

The wholesale price of sugar in 1914 was £18 per ton (which included £6 per ton duty), in July, 1915—the date of the commencement of Government control, £25/10/-, and now, the price to the public was £37, an increase of over 100 per cent. since the war. The price for sugar for fruit processing and condensed milk for Australian consumption, was £30/6/8 per ton.

The normal consumption of sugar in Australia is around 300,000 tons; thus, on a production of 500,000 tons, there are 200,000 tons to be exported

Quoting again from the Commonwealth Year Book, Mr. Boardman traced the history of the sugar agreements, including the promise of the Commonwealth Government that the embargo was to be definitely withdrawn on June 30, 1925.

This arrangement was broken, however, and the embargo on foreign sugar was then extended for three years, from September 1, 1925, and the embargo was again renewed till September, 1931.

Growers would remember, continued the lecturer, the wave of disappointment which swept over the country when the embargo was reimposed, after the definite promise that it would be withdrawn.

The pre-war duty on sugar was £6 per ton. Soon after the Government took charge of the industry the duty was increased to £9/6/8 per ton, on top of which an embargo was superimposed.

It was with no desire to use imported sugar that fruitgrowers were raising the present agitation, but it would certainly relieve the present deplorable position in the fruit industry if sugar for use in the jam and canning trade could be made available at the world's parity, plus the duty of £9/6/8 per ton. (Which duty, it must be remembered, is over 50 per cent. higher than pre war.)

In order to introduce stability as regards price, a figure could be agreed upon and made binding for a year or for three months, or any

period desired. As an alternative it would be reasonable to permit importation of sugar, paying the full duty of £9/6/8 per ton, such importations to be permissible only when Australian sugar is unobtainable at anything like the same cost. In order to safeguard the whole position, the fruit processing industry would give an undertaking of a definite preference to Australian sugar, and would agree not to make any purchase of foreign sugar without first placing full information before any board of authority that might be constituted to protect Australian sugar interests.

In round figures the production of

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Australian sugar is about 500,000 tons. The Australian consumption is round 300,000 tons, the balance being exported from Australia and competing in the world's markets at the world's parity. The difference in price was very great. The general public paid £37 for Australian sugar refined, yet the export price for the same sugar unrefined was about £11 or £12 per ton.

Sugar for fruit processing cost £30/6/8 in Australia, whereas in the United States and South Africa, the

price was £21 for sugar for domestic requirements. In New Zealand sugar costs £18 per ton. Allowing for a sur-charge in Australia in round figures of £10 per ton, this accounted for £400,000 on the 40,000 tons of sugar used in fruit processing here.

Fruitgrowers and the general public had been told that as regards export, the Australian fruit industry was under no handicap, as the sugar contents of goods exported was fixed at the world's parity. "This" (stated the lecturer), "was a fallacy which could be easily demonstrated. In the first place no rebate was allowed on the sugar contents of jam and canned fruit entering New Zealand. This was a market which should logically be developed by Australia. The Development and Migration Commission, in its report on the canned fruit industry, stated as follows:—

"In connection with the New Zealand trade, Australian canners and jam manufacturers are at a disadvantage, as no export rebate is allowed on sugar used for that trade. American manufacturers obtain their sugar for N.Z. at present at £13/15/- per ton, as against £30/6/8 in Australia." The statement then went on to say that the Sugar Board would allow this rebate but for the provision in the preferential tariff agreement forbidding it.

The fact remained, however, that the agreement was made between the two Governments and Australia agreed to this restriction, and the fact was also well known that not only was America in a better position as regards sugar, but also that South Africa had a better reciprocal trade agreement with N.Z. than had Australia.

So then there was no rebate on sugar in the N.Z. trade.

Now the point arises as to what constitutes world's parity. The Sugar Board decides what is the world's parity and bases its rebates accordingly, but the figure thus computed is not acceptable to the fruit industry.

The Development and Migration Commission further recommended that an enquiry be conducted as to the effect of the sugar agreement on the fruit industry. In the canned fruit report just quoted, an appendix was included in the form of a statement by Mr. A. R. Townsend, of the Australian Sugar Board, stating that the world's parity (export price) was decided after providing for Australian refinery costs—£4 to £5 per ton.

"It is just here," stated the lecturer, "where there is a sharp diversity of opinion. Australian fruit pro-

cessors have repeatedly stated that the finest Java white sugar (and which is quoted elsewhere as raw, or unrefined sugar), is for manufacturing purposes quite equal to the super refined Australian sugar. Some go so far as to say that this Java white is superior to the Australian refined sugar."

The statement is made by Mr. Townsend, that "Java No. 25 white sugar, which is unrefined, is subject to deterioration, both in store and in the manufactured article." This opinion by an accountant, however, is not borne out by practical users of the sugar. Leading fruit processors state that this Java sugar is highly satisfactory for jam manufacture, and in the days when this product was permitted entry, it was sold over the counter by grocers and appreciated by the public.

A great weakness in connection with the sugar producers' viewpoint was revealed when, in reply to a considered article in the "Fruit World," a letter was published in a Queensland journal to the effect that as only 8 per cent. of Australia's fruit crop was used in fruit processing, the sugar position had little or no bearing on the growers' problems.

This illogical Queensland advocate lumped together all the fruit produced in Australia, including Apples, Oranges, Bananas, etc., etc., in order to bolster up its arguments, quite overlooking the fact that the fruits thus included were not grown for processing at all.

The fact is, that of the fruits grown for jam and canning, the percentage varies from 60 per cent. to 90 per cent., and include canning Peaches, canning Pears, Quinces, Plums, Strawberries and berry fruits. The fact of Plum orchards going out of cultivation was a striking illustration of the fact that something was seriously wrong.

Continuing, the lecturer stated that Australia had to export all the sugar produced beyond Australian requirements. The heavy price we pay is to cover losses on export.

Just take the position in another way. In round figures, the annual consumption of sugar in Australia is 300,000 tons. Allowing a pre-war price of £18 to £20 a ton, and that this has increased to £36 per ton, the Australian consumer is making a contribution of say £5,000,000 per annum, without taking into account the added value of the duty, in round figures another £3,000,000, or a total of

£8,000,000. From first to last the industry is so bound by Government agreements and industrial awards, that it may properly be termed socialised.

"The foregoing remarks," stated the speaker, "were not made in any unfriendly spirit, but the facts had to be looked at impartially in order to properly estimate values and the economic situation."

The export price was one-third of the local price. If we applied the same procedure to wheat, this commodity would be exported at 1/7 per bushel. While for fruit processing in Australia the price was £30/6/8 per ton, South African manufacturers were paying the equivalent of £18/15/- per long ton. Yet in South Africa there was a duty almost the equivalent of our Commonwealth duty and despite the big production in

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South Africa, other countries had been shipping sugar there, and paying the duty.

The Development and Migration Commission, in its report on the canned fruits industry, stated as follows, regarding the effect of the sugar policy upon the fruit and jam industry.

"The matter is one deserving of close consideration. The added cost of sugar due to the sugar policy is a much more serious feature in jam production than in the canning of fruit on account of the greater quantity per pound used. The Commission, realising the growing dissatisfaction in the canning and jam industry, based upon the feeling that this industry is contributing to an undue extent to the profits of the sugar industry, believes that an inquiry directed towards a study of the effects of the present Commonwealth

sugar policy upon this and possibly upon other industries in Australia would give satisfaction, and would make the position clear to all concerned. The Commission, therefore recommends for the consideration of the Commonwealth Government that steps be taken accordingly."

The same report also included a copy of the annual statement of the Canning Peach Growers' Association of California, in which the general manager stated as follows:—

"The management of your Association has been charged from time to time by a certain element of being too friendly with canners. We do maintain friendly relations with canners. It has been our constant aim from the beginning to build and maintain a friendly relationship with our customers, believing that by pursuing such a course we could do more to promote the best interests of the industry, and especially the interests of the grower. This has been well illustrated by what was accomplished by the Association in the past season. To build up and maintain cordial relations with customers, to earn and keep their good-will, has long been recognised a sound, elementary principle, and essential to the success of any business."

In conclusion, the lecturer referred to the developments in the Pacific basin, and the enlarging opportunities for Australia to observe the trade and cultural tendencies in this increasingly important region.

Col. Hurry, M.H.R., Senator Lawson and Mr. H. Keck, M.L.C., briefly addressed the meeting.

A cordial vote of thanks was carried by acclamation to Mr. Boardman.

A resolution, proposed by Mr. Smith and seconded by Mr. G. Pritchard, was carried unanimously:

"That this meeting of fruitgrowers, while appreciating the sugar industry, regrets that an embargo is in existence, preventing the importation of sugar, and requests that Australian sugar be made available at the world's parity, plus duty for Australian requirements. In the meantime, special consideration should be given to the needs of fruitgrowers where disabilities are suffered. Further, this meeting requests that the recommendation of the Development and Migration Commission be fulfilled in having an enquiry into the sugar industry and its effect on the fruit industry."

It was further decided that this resolution be presented to the Minister of Customs at a date to be arranged, the deputation to be introduced by Col. Hurry, M.H.R.

New South Wales.

Orchard Notes for August.

(By C. G. Savage and H. Broadfoot.)

Ploughing.

IT is most important that ploughing should be completed without delay. The beneficial effects of early ploughing can scarcely be over-estimated, and are generally recognised by all thoughtful and observant orchardists. Briefly stated, the bene-

growth above ground appear, and is thus developing in such a manner as will give it a good start when the mild days of spring are ushered in, it is not yet too late to plant such trees. Where late frosts are not known citrus trees may be planted, but the planting of citrus trees had better be deferred in localities in which there is a likelihood of late frosts.

Grafting.

During the second half of August grafting may be carried out. If the grower has any unprofitable trees he should graft better varieties on to them, but he should take every care in selecting wood for grafting, and he should use scions only from such trees as have proved their fruitfulness and the quality of their fruit. If such care is not taken, the state of the tree after grafting is likely to be worse than in the first instance.

Grafting, as a method of working many varieties of trees, is used in preference to budding, and old trees are often top-grafted in preference to being budded, as, by inserting grafts in the branches close to the trunk, many of them will grow if properly put in; and should any fail, a young shoot may be allowed to grow, and later on a bud inserted. Top-grafting is generally more successful with Apples and Pears than with stone fruits.

There are several methods of grafting practised, but

the whip-graft

finds most favor with growers of small stocks. Cleft-grafting is used at times for working over old fruit trees, particularly Pears, Apples, Plums, and so on. Strap-grafting, which is another method of bark-grafting, may be used for working over medium to large-sized old trees, and for this method splitting the limbs is not required, but the scion is thrust down between the bark and the wood, and a strip of bark, supported by a thin strip of sap wood, is carried across the top of the wood to be grafted, and inserted under the bark on the further side, as shown in the illustration.

Grafting Wax.

The following is a good recipe for preparing grafting wax, the chief object of which is to exclude the air from the cuts on both stock and scion, and in this way to prevent the scion or the wood of the stock with which it comes in contact from drying before the union is effected. The wax should not be made so hard that it will crack after being applied. The

following ingredients should be found satisfactory:—4 lb. resin, 2 lb. beeswax, 1 lb. mutton tallow. Dissolve over a slow fire, and apply with a small brush while warm. If it is found necessary to apply this with the hands, it is best to keep them well greased, so as to prevent the wax from sticking to them. Another formula is:—1 lb. beeswax, 5 lb. resin, and 1½ lb. boiled linseed oil.

Insect Pests.

It is not too late to spray trees that have not yet commenced to shoot if

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fits derived from early ploughing are to put the soil into such a mechanical condition that it readily absorbs winter rains, to expose the soil to the beneficial effects of frost action, and to help to decompose effectively any organic matter that has been ploughed in. There is always the possibility of a dry spring, and many a grower who has delayed his winter ploughing has reasons to regret his remissness.

Planting.

Although the early planting of deciduous trees is highly desirable, for a tree planted early is establishing a root system long before signs of

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they are infested with San Jose scale. Strict watch should be kept for this pest. The most efficacious check can be kept on San Jose scale by spraying with miscible oil.

Spraying oil should be applied to Cherry and Peach trees that are aphid infested, and the application should be made as late as possible before the buds burst in the spring. The spraying will be useless unless it is done thoroughly, and it is essen-

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Ltd., Cleveland, Brisbane.

tial that it be applied with sufficient force to break up the clusters of aphides. An application of nicotine extract after the trees have commenced to shoot may be necessary. Great damage may be done by this destructive pest if measures are not taken to keep it in check, as its ravages not infrequently extend beyond the current year's crop and prejudicially affect the crop of the year following.

Apples placed in common storage require careful supervision, as black spot and common moulds sometimes make their appearance. The fruit-grower finds that the price of success in controlling pests is unfailing vigilance.

Fungus Diseases.

In many of the Apple-growing districts, powdery mildew appears to be on the increase. Some of the varieties most affected by it are Jonathan, Rome Beauty, and Sturmer. It cannot safely be ignored, and the best treatment to keep this fungus in check is to remove all infected twigs and later to spray with colloidal (atomised or atomic) sulphur.

Fertilising Citrus Trees.

In most districts Oranges and Mandarins are carrying, or have carried, a good crop of fruit, which, on the whole, is heavier than the average season's crop. Prices for the fruit have been influenced by the quantity produced, as well as by the cheap rates at which Apples have been obtainable. It is certain that next year's crop of Apples must be relatively light, though prices will be higher, and these same conditions are likely to be experienced with citrus production.

Fertilising citrus trees is, therefore, recommended as being a more profitable operation than usual during the forthcoming season. Fertilisers, particularly those having a high nitrogen content, are advised. The complete fertilisers usually sold for use on citrus trees do not contain sufficient nitrogen for the majority of trees. If such fertiliser mixtures are used it is recommended that additional sulphate of ammonia or nitrate of soda be applied, in quantities varying from 3 to 10 lb. per tree, for trees in bearing and from five to twenty years old.

Be Your Own Experimenter.

Every grower is advised to experiment on a few rows of trees with nitrogen, phosphoric acid, or potash only. In treating the remaining trees a good mixture may be used, which can be made of the following:—6 cwt. sulphate ammonia, 3 cwt. superphosphate, 1½ cwt. sulphate of potash. Mix all together well, and apply 1 lb. of the mixture per tree for each year of the tree's age. Thus, a seven-year-old tree will receive 7 lb. Apply about half of this amount by the time the buds burst, a further quarter of the amount about the end of October, and the remaining quarter by January. In districts where rainfall is not likely to be excessive, and danger of leaching is therefore small, a larger amount may be applied at the first application.

Any experiments conducted by the grower should be for a period of at least three years, by which time a reduction of phosphoric acid or potash may be found possible.—"N.S.W. Agricultural Gazette."

N.S.W. FRUITGROWERS' FEDERATION.

A MEETING of the Board of the N.S.W. Fruitgrowers' Federation was held on July 19. Those present were:—General J. Heane (in the chair), Messrs. H. G. Such (Griffith), F. Helson (Leeton), A. E. Herring (Batlow), A. J. Taylor (Warkworth), A. U. Tonking (Orange), W. E. Kirkness (Gosford), R. Hill (Narara), A. F. Dunstan (Sackville), J. Neil (Glenorie), W. W. Challis (Kentucky), G. H. Wilson (Organiser), and E. E. Herrod (Secretary).

Apologies.—Apologies for non-attendance were received from Messrs. H. S. Wark and T. A. Tester.

Organiser.—Mr. G. H. Wilson, the Organiser, reported the result of his visits to the Hawkesbury and Nepean districts, as a result of which he anticipated the affiliation of four new Associations formed in those districts.

The President referred to the decision of the Federation to terminate Mr. Wilson's appointment at the end of July, owing to the completion of the programme of organising.

Overseas Transport Association.—The President reported the formation of this Association and the establishment of State Committees, resulting from the Overseas Shipping Conference which was convened by the Prime Minister and held in April last between representatives of Australian producing, export and import interests and overseas shipping lines. It was unanimously agreed by that Conference that if further increases in freight rates were to be avoided or reductions made possible, it would be

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necessary to explore not only incidence of dues, taxes, charges and other expenses at the ports, but to secure the greatest possible economies by the most effective use of steamers. The President reported having attended the State Committee meetings as representing the fruit-producing interests of New South Wales.

Citrus Grading Regulations.—Consideration was given to the question of proposed amendments to the citrus grading regulations. Representations have previously been made with a view to an alteration of the "special" grade to allow for certain disfigurements over 2½ per cent. of the area of each Orange in the grade. As a result of representations made by the Central Citrus Association, the Board has now agreed to altering the proposal to provide for total disfigurements not exceeding an aggregate contained in a circle ¾ of an inch in diameter and in regard to "standard" grade disfigurements of not more than an aggregate contained in a circle 1½ inches in diameter.

Railway Matters.—The Secretary reported having conveyed the matters dealt with at the recent Annual General Conference to the railway authorities, and all the matters have been given careful consideration by the Railway Commissioners.

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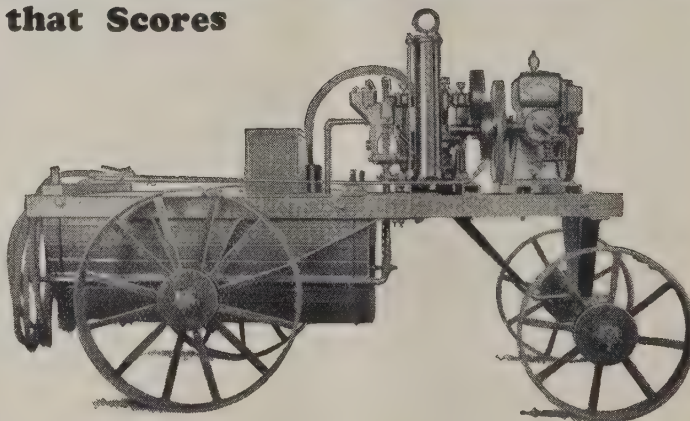
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Port of Manchester.—Correspondence from W. J. Wade (representative in Australia for the Port of Manchester), relative to the advantages of Manchester as a market, was received. It was decided to obtain further information with a view to giving publicity to any advantages that might be ascertained.

Fruit Juices.—Attention was drawn to the report of experiments being conducted by the Development and Migration Commission into the possibilities of fruit drinks from stone fruits.

Interstate Conferences.—Replies from the other States relative to the suggestion that the Annual Interstate Conference should be revived were received. Owing to the diversity of opinion, it was decided to refrain from further efforts, but to support a movement to hold an Interstate Conference next year at Hobart at the time of the Fruit Exhibition.

Hail Insurance.—The question of hail insurance was again discussed as a result of correspondence received from Batlow Packing House. Owing to the difficulties of getting a reasonable system of insurance from insurance companies, Mr. H. V. Smith, of Batlow, had prepared suggestions with a view to having the matter initiated. Mr. Smith's proposals are on the following basis:—(1) Insure fruit (Apples and Pears) to one value only, viz., 3/- per bushel case; (2) the insurer not to be allowed to insure more than 50 per cent. of his estimated crop; (3) payment to be made only on hail marked, or injured fruit, picked into bushel cases at harvest time and stacked for inspection; (4) the fruit on which insurance is paid to become the property of the insurance company.

Carters, Stealing of Fruit.—The President reported that a carter was charged with stealing a quantity of Apples. Certain agents had given evidence before the Court to the effect

that it was the general practice in the markets for agents to allow carters to take fruit from ullaged cases. The action being taken by the Federation is not yet complete.

Market Representative.—A committee was appointed to consider the question of the appointment of a Market Representative referred by the recent Conference to the Board.

Sulphur Dioxide in Dried Fruit.—It was decided to make every effort to ascertain the best method of control in order to keep within the prescribed limit. It was also decided to ask the Council for Scientific and Industrial Research to make available the services of the Analyst at the Commonwealth Research Station at Griffith to test sulphur dioxide content in dried fruits.

Better Distribution.—Further consideration was given to a scheme of better distribution outlined to the Annual General Conference.

Farm Produce Agents' Act.—It was decided to request the Government to deal urgently with proposals for the amendment of this Act with a view

to the matter being dealt with during the next session of Parliament.

Imperial Preference.—Members will have noticed announcements through the press that the British Government is considering abolishing the existing preference on dried fruits and sugar. No action is proposed to be taken by the Federation at present other than to express its support to the Prime Minister in the emphatic protest made. The position at present seems to be that the whole matter must await the consideration of the next Imperial Conference, the date of which is not yet known.

Workers' Compensation Insurance.—On the suggestion of Mr. Tonking, it was decided to make representations with a view to securing a reduction of the premium rates.

Apple and Pear Export Regulations.—A committee was appointed to wait by deputation on the Minister for Trade and Customs relative to proposed amendments of the Apple and Pear export regulations.

Fruit Marketing Conference.—Correspondence was dealt with relative to the personnel of the Fruit Marketing Conference, but in view of the constitution of the Conference and the fact that the Federation has full right of representation, it was decided at present to take no action towards suggesting any alteration.

Citrus Fruit Drinks.—A resolution was adopted regretting the delay taking place in amending Pure Food Act Regulations defining new standards for pure fruit drinks as a result of which large quantities of so-called citrus drinks are being sold which apparently contain a very small percentage of pure Orange or Lemon juice, and the sale of the pure produce is likely to be seriously affected.

Vice-Presidents.—Messrs. Tonking and Wark were elected as Vice-Presidents.

Executive.—The President, together with Messrs. Such, Neil and Kirkness, were elected as an Executive Committee.

Specialty Investments

Pty. Ltd.

Will Finance

the purchasing of

IMPLEMENTS, MACHIN-
ERY, STOCK or PLANT,
etc., etc.

Any Reasonable Finance
Proposition Considered.

Communicate with or Consult
The Manager

Specialty Investment Co.

89 Collins Street,
Melbourne, C.1.

Chilean Nitrate of Soda

Promotes rapid growth. It does not cause soil acidity or sourness even after continuous use. NATURE'S own fertiliser—has been absorbing for centuries the life and health giving properties of the solar rays.

Is entirely soluble—clean to handle and easily applied either broadcast or mixed with water and used as a liquid fertiliser. Possesses the chemical nature of the purest synthetic material plus the **GROWTH PRODUCING PROPERTIES** of a natural product.

RELEASES valuable **POTASH** in the soil. Has no secondary ill-effects and the **LIME CONTENT** of the soil is preserved.

You will be Pleased with Results

Sold on a guaranteed purity of 95 per cent., and contains 15½ per cent. **NITROGEN**.

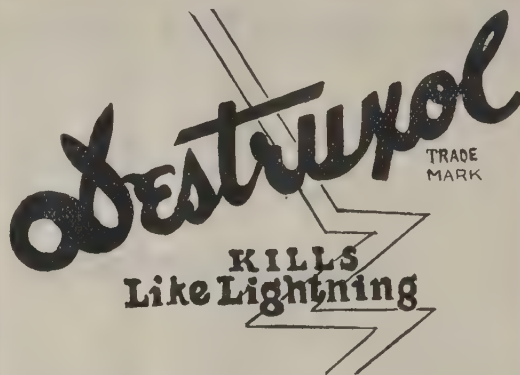
Obtainable at All
Fertilizer Merchants

Any difficulty in procuring supplies, apply to:—



CHILEAN NITRATE of SODA

G.P.O. Box 2037 L
SYDNEY



The All-in-one Spray

Cannot Injure
Fruit or Foliage

1. Whereas heretofore certain sprays were used in the elimination of certain insect pests, **DESTRUXOL** will eliminate several pests with one application at one and the same time.

2. Where other sprays must be used at certain seasons or times of day to avoid damaging fruit and foliage, this spray may be used at any time **WITH ENTIRE SAFETY**.

3. While other sprays must often be used five or six times per season, **DESTRUXOL** requires but **ONE**, or at most, two applications.

4. Furthermore, **DESTRUXOL** is sold in concentrated form, requiring only the addition of water to make the finished spray.

5. The **ECONOMY** of **DESTRUXOL** can be demonstrated with one application. Its effect can be shown in any affected orchard, field or garden in a period ranging from 30 minutes up to 5 hours in very exceptional conditions.

DESTRUXOL EMULSION

a stable emulsion versus heavy quick-breaking **MINERAL OIL EMULSION** and the reason why the **DESTRUXOL EMULSION** has been accepted by the growers of citrus and deciduous fruits, vegetable growers and lovers of flowers.

DESTRUXOL is a contact and fumigating spray. It has been distributed for years and is recognised as one of the few materials in the line of insecticides on the market to-day able to combat insect life in the stage of migration without doing damage whatsoever to fruit, bloom or foliage under any climatic condition, whether favorable or adverse. It has done invaluable service, not only in the temperate regions, where the deciduous fruits abound, but for the past few years also in the semi-tropical regions, where the Citrus fruits prevail and where it has been used successfully in the combating of various kinds of Scale in the migratory state, as well as of other insects. It is paramount in the control of Mealy Bug, Red Spider, Thrip, and all species of Aphids.

Use Destruxol Emulsion for fine citrus crops
Extra quality fruit at no extra cost
Destruxol saves time, labor, money

DESTRUXOL CORPORATION LOS ANGELES

Factory Representative now in Australia to negotiate with agents—

WATSON HOUSE,
9 BLIGH STREET, SYDNEY.

TREES

Choice Lots Offered for August Orders

Don't let the opportunity slip by of securing these finest quality fruit trees before the end of the month.



FROM GOODMAN'S

This year is our 40th Anniversary in the Nursery business, and our stocks of sturdy trees are particularly good. You will always secure splendid crops from Goodman Trees.

Prices on application. Terms, if desired. Order Now.

Apricots

4,000 Moorpark
1,500 Tilton
1,000 Newcastle
1,000 Tilton
and others.

Peaches

3,000 Golden Queen
4,000 Levis Cling
4,000 Pelora
4,000 Pullar's
2,000 Phillips
1,000 Peak and others

Also all leading lines in

ALMONDS APPLES,
CHERRIES, PEARS,
PLUMS PRUNES,
JAPANESE PLUMS,
SMALL FRUITS, Etc., Etc.

Catalogue Sent Free

to your address.

It contains many helpful hints and full details of prices, planting, packing, etc.

W. McF.

C.J. Goodman
Picnic Point Nurseries - Bairnsdale
VIC.

Tasmanian Notes.

STATE FRUIT ADVISORY BOARD.

Annual Report Reveals Wide Activity.

Interstate and Overseas Export: New
Grading Regulations Opposed:
Marketing Berry Fruits.

THE annual report of the Tasmanian State Fruit Advisory Board for the year ending June, 1929, which was adopted at the last meeting of the Board, contains much of interest to fruitgrowers.

In the report the following is stated:—

The past season was a particularly busy one. Members of the Board have given a great deal of time in attending meetings, working on sub-committees, and have generally acted in the best interests of the industry.

Fruitgrowers' Fund.

Arrangements were made with the overseas exporting agents and interstate shipping companies for the collection of the levy of one-sixteenth of a penny per case on fruits exported out of the State. The fund now has a credit balance of £1,665/14/6. Thanks are expressed to all who co-operated.

Defence Fund.

This fund was inaugurated during the 1923 season, the Board requesting the shipping agents to make a levy of 1d. per case on all consignments exported overseas to provide a fund to defend claims arising through fruit damaged in transit. The collections amounted to £5,760. Apart from the Wakefield investigation and certain

expenses arising through claims against shipping companies, no further expenditure has taken place.

The fund, together with accruing interest, has been invested and will be available for any future action which may be necessary to safeguard fruitgrowers' interests. The credit balance is now £7,062.

Associated Selected Agents.

The Board has kept in touch with the marketing of Tasmanian fruit on the mainland. This has been materi-

F.A. Maker Pty. Ltd.

Successors to
LANGWILL Bros. &
DAVIES

Engines, Pumps, Sprayers,
Spare Parts, Repairs.

Prompt Service:

130-144 Sturt Street
South Melbourne

GENUINE
"BLACK LEAF 40"
(Nicotine Sulphate)

Distributors

The Producers' Co-operative
Distributing Society Ltd.

Melbourne, Sydney, Leeton, Newcastle
Etc.

ally assisted by the committees of agents, who, by cables and advice, have helped to minimise gluts. The Brisbane and Melbourne committees have been re-organised, and are now acting under the same constitution and rules adopted by the Sydney Association.

Owing to the unsatisfactory carriage of fruit to Brisbane and Sydney, a request has been made for ventilated storage space for fruit from Tasmania to these ports.

The members of the Board are particularly desirous of recording the good work that is being performed by these committees, particularly in respect to marketing information and

in direct representation to the shipping companies, port authorities, and stevedoring companies on matters which are of vital import to the grower.

Seal of Quality.

To improve the general appearance of consignments of Apples and Pears, an attractive label was selected—"Tasmania's Seal of Quality." Supplies were made available free of cost to growers conforming to the conditions of use, comprising:—(a) The use of a clean, new case, the ends being planed or smoothed. (b) Uniform stencilling and branding according to the approved design. (c) Limitation of the brand to the best export varie-

ties in lines of not less than 15 cases of any one size or grade.

Applications were called through the press from growers desiring to use this label, and approximately 60,000 were distributed, mainly for overseas export. Consignments forwarded under the scheme were subject to careful inspection before shipment, and their attractiveness was generally commented upon. A detailed report will be furnished by the Agent-General in respect to these consignments, particularly in regard to the appearance of the cases and contents, prices, advertising value, etc.

Black Currants and Raspberries.

Owing to advices from local factories that only very small quantities were required, the Board endeavoured to obtain an agreement amongst the different firms for:—

1. A minimum price of 3d. per lb.
2. The sale of all pulp at the following minimum prices:—Black Currant, £35 per ton; Raspberry, £37 per ton.

It is regretted that after considerable negotiations an understanding was not reached by all the firms concerned. As this agreement would only be binding if signed by all processors, the matter was not proceeded with.

Then the Board, through the Sydney and Melbourne committees of agents, made every effort to develop the trade in fresh fruits (Black Currants) to these markets. The Premier (Mr. J. C. McPhee) rendered valuable assistance.

Few growers were able to send shipments, but those who did so received remunerative prices, and there is every indication that the trade will be developed on organised lines.

Export Regulations—Overseas Trade.

At the latter end of 1928 a communication was received from the Department of Markets, advising that as a result of a conference of State Supervising Officers, it was proposed to adopt certain amendments to the "Overseas Apple and Pear Export Regulations," involving:—

1. The deletion of the plain grade.
2. Compulsory marking of the number of fruits in a case, in lieu of the size and/or number, as at present in force.
3. Elimination of certain varieties selected as unsuitable for export.

Melbourne City Council BLOOD FERTILIZER or Concentrated Manure

Manufactured from Animal Refuse at Desiccating Works, City Abattoirs, Flemington.

This organic manure may be used in its original manufactured form or as a basis for mixed fertiliser.

Analysis—Nitrogen, 8.02 per cent.

Phosphoric Acid, 1.25 per cent.

Potash, .61 per cent.

Price:—£9 per ton, Spencer-street Railway Station, or Melbourne Wharf; £8/15/- per ton at works; £8/5/- per ton in purchasers' bags at works.

POULTRY MEAL.

Price:—15/- per cwt.

Orders—to be forwarded to Superintendent, City Abattoirs, Smithfield-road, Flemington, W.1.

Descriptive Pamphlets may be obtained on application.

W. V. McCALL, Town Clerk.

Printed Fruit Wraps

We Specialise in CALIFORNIAN FIRST QUALITY WHITE AND COLORED

Growers and Packers

are you aware that Printed Wraps only cost approximately $\frac{3}{4}$ d. per case extra.

We solicit your enquiries for the coming season.

CHAS. R. GABB & CO.

88-94 Franklin St. - - - Melbourne

And at 16 Chester Street, Adelaide.

Phones: F 2121, 2122

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PATENT ATTORNEY

"HEPTY HOUSE," 499 LITTLE COLLINS ST.
MELBOURNE.

PORT OF MANCHESTER

Extracts from Official Market Reports

(Published weekly by British Minister of Agriculture) willingly forwarded to Growers, Exporters and others on application to address below. These records

PROVE Prices realised for Imported Fruit AT MANCHESTER Challenge Comparison

With results obtainable at any other market, as the following examples indicate:—

	Hull.		Liverpool.		London.		Manchester.	
	1st quality.	2nd	1st quality.	2nd	1st quality.	2nd	1st quality.	2nd
18/1/29. Oregon Newtowns (case) ..	15/6	13/6	15/-	13/-	13/6	11/-	17/-	14/-
American Greenings (barrel) ..	35/-	30/-	31/-	26/-	35/-	30/-	36/-	30/-
25/1/29. Oregon Newtowns (case) ..	15/6	13/6	13/6	11/6	14/-	11/-	16/-	14/-
" York Imperials (barrel) ..	36/-	29/-	28/-	22/-	30/-	24/-	36/-	34/-
" Baldwins (barrel) ..	30/-	26/-	25/6	23/6	30/-	20/-	32/-	28/-
" Russets (barrel) ..	34/-	28/-	31/6	28/-	30/-	25/-	35/-	33/-

GROWERS AND EXPORTERS! WHY NOT SHIP DIRECT to the best market as your competitors do?

For information as to charges, selling brokers and importers, etc., apply to:—

Cables & Telegrams—

"Portoman," Sydney.

CAPTAIN W. J. WADE,
8 Bridge St.,
SYDNEY, N.S.W.

4. Compulsory packing of all consignments in smoothly dressed or planed cases.

The members of the Board have strongly opposed these amendments, and particular exception has been taken in regard to the representation which was accorded to Tasmania at the conference. A protest has been entered.

It is considered such alterations to regulations affecting the overseas export trade should be referred to the particular industries concerned before adoption, and that at any subsequent conferences necessary for the discussion of such proposals, producers and exporters should be fully represented.

Shipping and Marketing of Fresh Fruits.

Conferences were arranged with the Marine Board, shipping agents, and waterside workers to ensure the best facilities for receiving, stacking, and loading consignments. Owing to the light crops, there was no congestion this season.

Mr. T. Burnaby, who was appointed as fruitgrowers' representative on the Hobart wharves, proved himself diligent and tactful: he has furnished a valuable report. The value of this appointment has been fully demonstrated.

Overseas Freights.

At the request of the Prime Minister for the Board to appoint a representative on the "authoritative body" created to discuss the freights on overseas imports and exports, Mr. B. J. Pearsall, M.H.A., was selected.

A conference took place in Sydney. Committees have now been established in each State to consider the present methods of shipment, port charges, etc., and to suggesting economies.

General.

Amongst other important matters which have received attention, the following may be cited:—

Tariff on Fertilisers.—A case has been prepared and submitted to the Tariff Board, showing the importance of artificial fertilisers in the production of fruit in Tasmania, and the undesirability of adding to the present costs by an increased tariff.

South American Shipments.—A sum of £100 was spent in advertising the shipment of Tasmanian fruit sent to South America last season.

"The Truth About Our Fruit."—In accordance with the wishes of the 1928 conferences, arrangements were made with the "Mercury" to publish Mr. A. J. Villiers' articles in booklet form for distribution. Copies are still available.

Brisbane Fruit Show.—Arrangements have been made for an exhibit of Tasmanian Apples at the 1929 Brisbane Royal Show.

In conclusion, the appreciation is expressed for assistance by the Minister for Agriculture and the officers of the Horticultural Division. The report is signed by Mr. B. J. Pearsall, Chairman, and P. H. Thomas, Secretary.

State Fruit Advisory Board.

A MEETING of the State Fruit Advisory Board was held at Hobart on July 19. There were present:—Messrs. B. J. Pearsall, M.H.A. (Chairman), W. H. Calvert, M.L.C., J. P. Piggott, M.H.A., O. S. Morrisby, T. S. Eddington, J. H. Astell, F. Peacock, N. Campbell, M.H.A., V. J. Skinner, A. Davies, P. H. Thomas (Secretary).

Marketing of Apples in Sydney.—Mr. Piggott said a Sydney retailer alleged "topping up" of cases of fruit under Tasmanian brands, and it was decided to further investigate the matter.

Fruit Export Regulations.—It was decided that in view of the serious effect of the new regulations on the Tasmanian industry, the Minister of Agriculture arrange an interview with

the Federal Minister for Markets. A committee with power to act was appointed, comprising Messrs. Calvert, Campbell, Peacock, Davies, Piggott, and the Chairman.

Interstate Conference of Fruit-growers.—The letter from the N.S.W. Fruitgrowers' Federation suggesting an Interstate Conference of Fruit-growers, was referred to the Annual Tasmanian Conference.

The Agricultural Bureau submitted the following remits from local branches:—

1. Amendments to overseas export regulations (Franklin).

2. Fruit marketing organisation (Sandfly).

3. Export of Black Currants to the mainland (Sandfly).

4. South American shipments of Apples, 1928 season (Franklin).

5. Adoption of a scheme for the control of overseas Apple and Pear shipments on similar lines to that operating in New Zealand (Spreyton).

AUSTRALIAN FRUIT EXHIBITION TO BE HELD AT HOBART NEXT AUTUMN.

A Comprehensive Programme.

AN all Australian Fruit Show will be held at Hobart in the coming autumn, and plans are being laid for a comprehensive display. A strong committee has been organised, the Chairman of which is the Hon. L. M. Shoobridge, M.L.C.

A public meeting was called in Hobart, when the President stated that the previous fruit exhibitions in 1914 and 1920 were eminently successful.

It was decided to seek the co-operation of the Department of Agriculture, Agricultural Bureau of Tasmania, and the Railway Department and other interested bodies. It is hoped that there will be a considerable number of exhibits from the other States.

The President, Mr. Shoobridge, or the Secretary, Mr. Honey, would be glad to receive correspondence from growers in any part of Australia making suggestions for the success of the Show.

Dried Fruit News.

NEW CONTAINER FOR DRIED FRUITS.

DRIED fruit producers will be interested in the new waterproof package which has already proved of immense benefit to other sections of trade needing similar packages. These packages are made from pulp by a patented process. The containers are light, yet are airtight and waterproof, and only half the cost of tin. Grocers and others in England and America are using these containers for biscuits, salt, and a multitude of products.

A company has been formed to manufacture these containers in Australia. It is understood a factory will be built at Mildura, if justified by local conditions. The containers can be made in all sizes to hold from 1 lb. upwards.

One important suggestion has been made, viz., that if Australian dried fruit could be sterilised it could then be packed in these containers and be ready for distribution in bulk or in small quantities through grocers, with the assurance that the grub pest had been eliminated.

Further details are obtainable from the Australian representative, Mr. G. Petre, G.P.O., Box 4324, Melbourne.

DRIED FRUIT SALES.

ACCORDING to cabled advices received by the Commonwealth Dried Fruit Board, 360 tons of Australian dried fruit were sold in Great Britain during the week to July 18, and represented a value of £15,850.

This quantity included 112 tons Sultanas, averaging £46/13/-, and 211 tons Currants, at an average price of £44/12/-.

Total sales of 1929 season's shipments represent a total value of £308,929, and cover 6,412 tons of the shipments which to date amount to 36,302 tons. Progress in Sultanas is relatively slow, but is doubtless affected by recent political happenings. It is hoped that increasing interest will be displayed in all classes of fruit during the coming six weeks.

Advices received indicate that the field for Lexias is comparatively limited. Fortunately, shipments of Lexias are not heavy this season.

Prune Grading.

THE new regulations provide for eight grades of dried Prunes, namely, ranging from 20-30 to 80-90 to the lb., and small. A margin of not more than 5 per cent. by count is allowed on each grade from the grades immediately below and above such grade. All Prunes packed or sold must be in one of the grades

LIME for the ORCHARD

UNBURNT SCREENED
containing as per analysis
83.03 CALCIUM CARBONATE.
Price: 20/- per ton on Rail
CURDIE. Bags extra

Send Own Bags Direct to Works
for Filling.



Registered Trade Mark

BURNT SLAKED
containing as per analysis
92.9 CALCIUM HYDRATE.
Price: 30/- per ton on rail
CURDIE. Bags extra

Also BUILDERS' LIME, ALL BRANDS CEMENT, and BUILDERS' HARDWARE.
Further Particulars from Proprietors,

T. CURPHEY PTY. LTD.

344 SWAN STREET, RICHMOND, VICTORIA

Telephone:
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Works:
Curdie's River.

RAIDO DUSTS

"BESTS PESTS"

Gardeners! Vignerons! Orchardists!

Our Dusting Materials are the result of Five Years' Experience in the Art of Dust Manufacture

Having introduced commercial dusting into the Commonwealth, and New Zealand, and closely following the progress of our foremost plant pathologists and entomologists in their researches of plant pests, and keenly observing the problems of practical Growers, we hold a unique position in the dusting field.

Unfettered by former limitations Raido Dusts are now able to place at the service of growers dusting materials in accordance with the latest developments of plant pest control at greatly reduced prices.

Among the many pests dusting has completely conquered are Aphis, including Cabbage and Peach Green Aphis, Red Spider, White Fly, Thrips, and many of our most formidable Chewing Insects, including Curculico Beetle, Cut Worms, Slugs and Snails, Riddlers, etc., Mildew, Fungi Diseases, including Celery Fire Blight and Peach Leaf Curl.

To these successes we have every reason to believe

Australian Spotted Wilt on the Tomato : can be Controlled by Raido Dust :

In spite of the severity of the attack of Spotted Wilt last season, we are able to demonstrate this disease was controlled by regular dusting with our Tomato Dust.

Five years ago the only records we had of the value of dusting were those obtainable from other Countries.

To-day the loads of pest-clean vegetables being marketed in Adelaide, for both local and interstate trade, bear the best evidence of the efficiency of dusting in Australia.

100 per cent. of the Vegetable Growers on the Adelaide Plains have this year adopted the dusting method for the control of pests and diseases common to vegetables during the Autumn period. These results have been accomplished during the worst known season for Cabbage Aphis.

DUSTING HAS OPENED UP A NEW ERA IN PLANT PEST CONTROL. CLEAN CABBAGES AND CAULIFLOWERS, ETC., ARE NOW BEING MARKETING AT REASONABLE PRICES.

We have proved beyond all doubt that the dusting of Vines during the flowering period will result in a far better setting of the fruit.

For further particulars apply—

AGENTS:

We Require Well-established Country and Interstate Agents to handle our Dusting Materials. Attractive terms offered. Write for further particulars.

RAIDO DUSTS

**Raido Building, Henley Beach Rd.
FULHAM, SOUTH AUSTRALIA**

Telegrams: "Raidust," Adelaide

PRICE LIST.

We shall be pleased to forward price list, or will advise you concerning any pest or disease on plant life, etc.

specified and the Prunes contained in any covering or package must be of one variety.

Each package must be legibly marked with the name or registered trade mark of the packer, the grade of the fruit, the word "Prunes," and the name of the variety.

The New South Wales Minister for Agriculture (Mr. Thornby) states that these regulations will now be enforced.

A. H. McDONALD'S SPRAYING PROGRAMME.

Messrs. A. H. McDonald & Co. Pty. Ltd., of 566-574 Bridge-road, Richmond, Victoria, have a well-organised spray department for service to fruitgrowers. They announce that they have made plans well in advance for this season's spraying arrangements, and are ready to supply information on spraying propositions of interest to growers.

This firm is the agent for the 604 "Simplicity" sprayer, which is fitted with a "Bean" pump; also the 604 "Duplex" sprayer. The 604 "Simplicity," 5 gallons per minute, with a vat capacity of 80 gallons. The

"Duplex" sprayer, 7 gallons per minute, with a vat capacity of 120 gallons. The 604 is stated to embody important improvements.

A few of the points worthy of special mention are the porcelain-lined cylinders, which resist wear and tear and the action of chemicals—there is therefore absence of corrosion. There are two valves only, and these are easily accessible; in fact, they can be lifted out with the fingers and replaced in a moment. The seats are detachable and reversible. All parts are standardised, and this in itself is a big advantage. The pressure regulator is an automatic device, cutting out the pump when the set pressure is reached. This regulator allows both the pump and engine to idle until the pressure falls, thus saving in wear and tear. There are other features of interest to growers, and full details will be supplied to all who write for this special literature.

McDonald's also advise that they are well prepared with various sprays, including Orchard Brand arsenate lead powder, Orchard Brand dritomic sulphur, Mac's casenate, Mac's C.C.S. No. 1, Mac's C.C.S. No. 2, "Maccol" No. 1, "Maccol" No. 2. Pamphlets regarding

these are available on application. The firm further state that they have experts to answer queries, and any information will be gladly supplied. Correspondence is invited.

CODLIN MOTH CONTROL BY DUSTING.

Fungous Diseases Also Eliminated.

The old-established firm of Gibbs, Bright & Co., of 27 Grenfell-street, Adelaide, make a special announcement of their dusting method for controlling codlin moth in Apples and Pears, also other insects attacking fruit and vegetables, and to prevent fungus diseases on trees and vines and vegetables. These are known as the "G.B." dusts, and are recommended for application with a Niagara hand or power duster. Full information is obtainable on application to the firm.

Boxmaking.

A recommended nailing machine is now offered by Messrs. Gibbs, Bright & Co., 27 Grenfell-street, Adelaide. This is known as Millers' British-made nailing machine. There are many appreciative users. Full particulars are obtainable on application.

Hamburg Fruit Market

One of the Best Outlets

for

AUSTRALIAN FRUIT

GUSTAV BEY

Fruit Broker & Importer

Fruchthof, Oberhafenstrasse
Hamburg, Germany

Shipping "BEY" Brand

AGENTS:

Victoria: I.F.M. Co., 410-414 Flinders-lane, Melb.

Tasmania: H. Claude Little, Tasma House, 85a Collins St., Hobart.



(By "Syringa.")

DURING the last two months, sowings of vegetables have been light, but many vacant pieces of ground have been dug over in preparation for the early spring sowing. Although hardly yet into spring, good sowings can be made this month for early crops.

Make large sowings of Peas in rich and friable soil. Make successive sowings, making the second sowing immediately after the first lot shows through the ground. Sow English Wonder, Green Feast, and William Hurst (dwarf varieties), and Yorkshire Hero.

In sunny situations, where the soil is sandy and well-drained, a first sowing can be made of French Beans. Either Canadian Wonder, or Pale Dun are best for early crops.

Plant Potatoes for Early Crops.

Where early Potatoes are desired it is necessary that the best sheltered position available be selected for growing them, and make sure that the tubers are well sprouted before planting.

Any soil that is fairly light and open will produce a good crop, providing it has been liberally cultivated and manured.

Plant the sets about six inches deep in rows two feet apart, leaving about one foot apart in the rows. Earth up when four to six inches high.

The most suitable variety for early crops are Carmen No. 1, Early Manistee, and the Kidney types.

METROPOLITAN FRUIT-GROWERS.

Annual Meeting at Box Hill.

Name Changed to Southern Fruit-growers' Association.

The annual meeting of the Metropolitan Fruitgrowers' Association was held at Box Hill, near Melbourne, on July 4, the President, Cr. W. Mock, being in the chair.

Mr. Knox, M.L.A., said that growers had had three bad years, but the coming year was full of promise of success: the industry possessed men of initiative and independent thought, and they did not want too much attention from the Government.

Mr. W. H. Everard, M.L.A., said he hoped the Government would recognise the good work done by the metropolitan fruitgrowers in establishing kerb markets. More kerb markets were needed. Every municipality should have one.

Annual Report.—The annual report stated that eight kerb markets had been in operation during the year. The prolonged industrial trouble had interfered considerably with trading. A committee had been appointed to co-operate with the Export Handling

Committee in an endeavour to improve export conditions. The support received from growers had been disappointing, but those growers who had shipped Pears and Plums had obtained very satisfactory prices.

Victoria Market.—On the recommendation of the Executive, a motion was agreed to unanimously protesting against the proposal of the City Council to prohibit horses being kept in the Victoria Market except in K and L sheds. It was considered that this would cause hardship to those fruitgrowers who did not run motor-trucks.

The Superintendent of Markets (Mr. G. B. Minns) said there had been many complaints because of the insanitary condition of the markets. Now 80 per cent. of the vehicles were motor trucks. Consequently the Council had decided that horse-drawn vehicles should be confined to K and L sheds.

Rural Workers.—On the motion of Mr. W. A. Webb (Doncaster), seconded by Mr. J. Petty (Doncaster), it was decided to urge that rural industries should be exempted from the operation of any system of State industrial regulation adopted consequent upon the abolition of the Federal Arbitration Court.

Change of Name.

It was decided to reorganise the section so that it would have a wider scope. The name was changed to Southern Fruitgrowers' Association, and the following objects were adopted:—To watch the interests of growers in the metropolitan markets and suburban factories; to develop interstate and overseas marketing, organise kerb markets, and open markets in suburban and country centres; to watch proposed legislation affecting fruitgrowers. The subscription for individual members was fixed at 10/- a year, for fruitgrowers' societies at 2/- a member, with a minimum of £1, and for cool stores and packing sheds at £22/-.

Office-bearers.—The following officers were elected:—President, Mr. W. Webb (Doncaster); Vice-President, Mr. L. Pepperell (Mount Waverley); Executive, Messrs. J. Lang (Harcourt), R. M. Finlay and R. J. Lorimer (Diamond Creek), W. T. Seller (Mount Waverley), J. C. Aird (Ringwood), J. Tully (Doncaster), and G. Mock (East Burwood). Mr. J. W. Aspinall was re-appointed Secretary, and Mr. W. Mock, the retiring President, will serve on the Executive as past President.

The Clyde Simplex Driers

For Drying
Fruit Vegetables and other Products

NO MORE WASTE FRUIT OR VEGETABLES

Simple • Self Contained

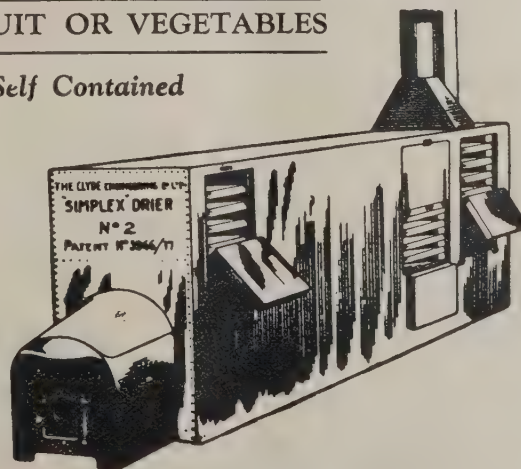
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Householders
Small Orchardists

OR

Large Factories

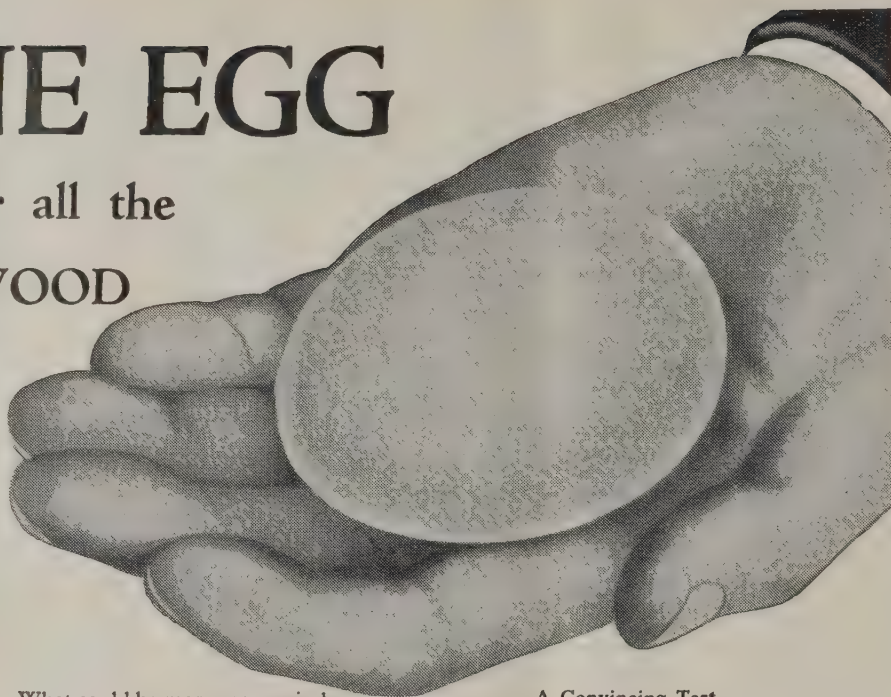
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Clyde Engineering Co. Ltd.
GRANVILLE, N.S.W.



ONE EGG

pays for all the
KARSWOOD

a bird
needs in
2 months!



Just think of it! What could be more economical and what more satisfactory? For that little dash of Karswood Poultry Spice (containing dried and ground insects) in the mash, can make all the difference in the world. Your birds will show not only a surprising improvement in general health and condition but also a marked increase in egg-production. This will be not a temporary forced increase. Karswood does not force, because it contains no forcing ingredients, such as gentian, chillies, and cayenne pepper. It coaxes gently and stimulates the birds to more active laying. Feed Karswood regularly, and the increase will be a permanent one.

"Always have Eggs—Winter and Summer"

Dear Sir:

I received your book (*The Bestway Poultry Book*) for which I thank you.

I would like to let you know what results I have got out of your Karswood Poultry Spice. I first gave it to 9 Black Orpington Pullets 6 months old, they were laying 5 to 6 eggs per day, but after a fortnight of Karswood Spice I got 7, 8 and 9 eggs per day and they kept same up for the winter months. I now give it to all my fowls with the result I always have eggs winter and summer, and again my fowls always look healthy. Different travellers who have called at my place say they have never seen fowls in all their travels that look as healthy as mine.

Again thanking you for your great help.
I might say you can use this as you like.

(Sgd.) GEO. McDERMOTT,
6/6/29. Amphitheatre, Vic.

KARSWOOD POULTRY SPICE

Increases egg-production without forcing, because it contains ground insects but no cayenne pepper, etc.

A Convincing Test

Dear Sir:

I have been using Karswood Poultry Spice for the last four years. I keep about 300 Poultry, half of them free range and the other half on the intensive system. The ones on the intensive system are in five different compartments of 30 birds in each, all White Leghorns, equal in type and age. The three compartments Karswood fed in three months average:—

Jan.	601	per compartment	30	birds
Feb.	589	"	"	"
Mar.	565	"	"	"

Two compartments without Karswood Spice average for same period:—

Jan.	397	per compartment	30	birds
Feb.	325	"	"	"
Mar.	298	"	"	"

A reduction of 735 eggs.

Yours faithfully,

(Sgd.) W. UNSWORTH,

Thomas Estate, Shepparton,
Victoria.

20/5/29.

Make This Test.

Go to your local grocer, storekeeper, or produce dealer. Get a 1/- packet of Karswood Poultry Spice, then give it to half-a-dozen of your birds, in accordance with the directions on the packet. Do not expect immediate results—Karswood works naturally, not suddenly. It takes at least a fortnight to produce results, but they are good and sure.

Supplies

Karswood Poultry Spice is obtainable from all wholesalers and stores at the following standard retail prices: ½lb. packet 1/-; 1lb. packet 2/-; 7lb. tin 13/-; 14lb. tin 25/-; 28lb. tin 48/-.

5M.29



SOME PRACTICAL POINTS IN CHICKEN REARING.

Success in chicken rearing depends not so much on the number of birds which reach maturity, as on their quality.

It is a waste of both time and money to rear stunted, deformed, or physically weak chicks.

Cleanliness is most necessary, and chicks should get as much direct sunlight as possible. The brooder house should be well ventilated, but free from draughts.

Above all, avoid the overcrowding of chickens. The floors of the brooder should be kept perfectly dry, as wet brooder floors mean leg-weak and cramped chicks. Hard balls often form under their toes, and cause lameness.

Uniform brooder heat must be maintained. If it is not, the chicks are liable to become overheated or chilled, and bowel trouble is sure to follow.

Give chicks access to heat, and they will choose from 85 to 90 degrees when placed in the brooder. Keep the lamp or stove hot enough to furnish this amount of heat over a wide enough floor space to reach all.

Do not crowd too many chicks into the one brooder, or brooder house, and see that sufficient air is circulated to take off the fumes.

That incubator-hatched and brooder-reared chicks can be successfully raised without any drain on their vitality, has been conclusively proved.

Reliable breeding stock, careful selection of eggs, and proper care and attention in hatching and rearing are the essential factors which spell success.

However good the parent stock may be, a few weeds will always be raised where large numbers are concerned, and if these are allowed to remain unculled, they will have a disastrous effect on future generations.

The wise breeder who weeds out and kills his inferior stock before it reaches the breeding pen, not only benefits himself, but others who might later introduce stock from his pens.

A few serious defects among chicks which should be guarded against, and eradication by culling are leg weakness, stunted growth, roach back, crooked toes, side sprigs, crooked breast, and "going light," or general debility. Birds so affected should not be given room in any poultry yard.

It is only by annually weeding out physically defective and surplus young stock that a good healthy strain can be established and maintained.

"The Australasian Beekeeper"

The leading Bee Journal in the Southern Hemisphere.

A monthly magazine entirely devoted to beekeeping. Published in Australia for Australian Conditions. Subscription (5/- per year, prepaid, post free), may start now.

Free sample copy available on application to the publishers, Pender Bros. Ltd., Box 20, West Maitland, N.S.W.

POULTRY AT WERRIBEE, VIC.

Mr. W. Cullen, of Werribee, is a poultry farmer who started out as an orchardist. He has seven acres under fruit, mostly Apricots. It is a young orchard in the making, for most of the trees are two years old. The varieties planted are Moor Parks, Newlands Early, and Munster Seedlings.

This poultry farm is known all over the State for high-class birds. Day-old chicks are sold—White Leghorn and Black Orpington. Mr. Cullen would like to get into touch with fruit-growers who are thinking of going in for high-class birds. Correspondence is invited.

BEEKEEPING.

COLONIES in normal conditions should now have a good quantity of sealed brood in the combs, and young bees emerging every day, states Mr. E. A. Earp, Senior

Apiary Instructor, in the N.Z. "Journal of Agriculture." The queens will be laying well. Breeding should be kept going steadily, so that each colony should grow in strength in order to take advantage of the first flow from the early nectar-secreting plants.

Food and warmth are the main factors in promoting steady breeding.

Through the spring nectar can be gathered, but when, through bad weather, the bees are unable to do this, the food supply will diminish rapidly, and the bees may be reduced to starvation before the beekeeper is aware of their condition. August and September are critical months, and feed should be given without delay where necessary.

All stocks must be clean and in good condition. The hives should be clean and well painted. No cracks or knot-holes should be allowed in the hives during the winter. It is far better to overfeed than to underfeed, and more feeding means more brood. Feed only in the evening, inside the

hives, and use a syrup in the proportion of two parts water to one part sugar; dissolve thoroughly, and feed as soon as cooled sufficiently as to be harmless to the bees.

Permanent shelter should be provided. A live hedge kept at 8 ft. or 10 ft., is the best; failing this, some kind of breakwind is essential. The hives should never be exposed to high winds.

Open the hives only on warm days, and make necessary observations as quickly as possible. Mark the date of each examination.

The beginner should endeavor to distinguish the sex of the brood at a glance, and keep a sharp lookout for the queen; she is easily distinguished by the length of her body and the comparative shortness of her wings.

To arrive at a rough estimate of the quantities in each hive, compare the weight of each frame as you lift it with an empty comb. Beginners should be content with one or two strong colonies until the learner's stage is passed.

The Codlin Moth Problem

Solved by VOLCK

"During recent years, fruitgrowers all over the world appear to have had increasing difficulty in obtaining a satisfactory control of the Codlin Moth, in spite of the better chemical analyses of modern arsenate of lead and improved spraying machinery. It is difficult to account for this, but the theory has been advanced that the continuous use of lead arsenate has led to the evolution of a strain of Codlin Moths which is partially immune to arsenical poisoning."—(Extract from the Journal of the Department of Agriculture, Victoria.)

Years of experimenting by Mr. Volck—the American chemist who first introduced the Lead Arsenate spray for Codlin Moth—have resulted in the production of a spraying material (named after its originator, VOLCK), which, when used in conjunction with Arsenate of Lead, gives absolute control of Codlin Moth.

The following results were obtained in a test conducted by the Agricultural Department on the orchard of Mr. T. Code, of Harcourt.
Test by Agricultural Department:

Arsenate of Lead	5lb. to 80 galls.	11.1 Grubby
Arsenate of Lead	4lb. and 1 pint nicotine to 80 galls.	12.9 Grubby
Arsenate of Lead, followed by "VOLCK"4 Grubby

"The only block which showed a satisfactory result, treated with two calyx sprays of arsenate of lead, followed by three sprayings with "VOLCK" Summer Spraying Oil, 1 in 32, stood out from the beginning of the fruit season. It was only late in the season that any attack by Codlin Moths could be detected."—(Extract from the Journal of the Department of Agriculture, Victoria.)

VOLCK

Volck is a petroleum derivative, which, in addition to rendering the Arsenate spray much more efficient, effectively destroys Scale, Spider, and all other insect pests. Yet it will not harm the most delicate hothouse plants, and in America it is now being used as the standard spray for Scale pests on Citrus trees.

Read the following testimonials :—

"Melrose,"

Fakenham,

March 11th, 1929.

Dear Sir,

I have given "VOLCK" a fair trial this season, and find it a good insecticide being particularly effective on Red Spider.

When used for Codlin Moth on Jonathan and Yates, the percentage of grubs was very small indeed as compared with those alongside, sprayed with Arsenate of Lead. The fruit was very clear in skin and the foliage of the tree very healthy.

It is my intention to use "VOLCK" more freely next season.

Yours faithfully,

A. E. HONE.

Narrewarren,

Feb. 15th, 1929.

Dear Sir,

I am pleased to let you know that my results from using "VOLCK" have proved very satisfactory.

I used it on a patch of Jonathan Apples in combination with Arsenate of Lead giving five applications for the season and I find the fruit much more free from Codlin than those sprayed with Lead alone.

I also used it on Yates Apples for Red Spider and with only one application obtained very good results.

Yours faithfully,

(Sgd.) ROBT. WEBB.

Send for VOLCK descriptive literature, price lists, etc.

H.C. PANNIFEX & CO.

26 MARKET STREET—MELBOURNE, C.1.

Sole Agents for Vic., N.S.W., Queensland, S.A., W.A., and Tasmania: Australian Fruit and Produce Co. Ltd., Fruit Exchange, Sydney.

AN AUSTRALIAN ABROAD.

Mr. R. S. Sampson, M.L.A., Gives His Impressions of a World Tour.

MR. R. S. SAMPSON, M.L.A., of Perth, Western Australia, recently went a trip round the world, and has compiled his experiences in a handsome illustrated brochure, entitled "The Old World and the New." While abroad, Mr. Sampson enquired into many matters, particularly the marketing of fruit.

Journeying via Suez, Mr. Sampson visited Malta, Italy, Austria, Germany and France, thence to England, returning via Canada, U.S.A., across the Pacific, calling at Raratonga and New Zealand. The reader finds much of interest in Mr. Sampson's experiences. As regards fruit, Mr. Sampson states that in 1925 Covent Garden handled 670,000 tons of fruit and vegetables, and that London is the best market in the world for fruit. Western Australian Apples are acknowledged as the best from Australia. Tasmanian fruit was unattractive. He then quoted the advice tendered by Major E. G. Monro, who is head of the big marketing concern of Geo. Monro Ltd., Covent Garden. Summarised, Major Monro recommends a West Australian Fruitgrowers' Federation with a salaried man in England, to whom all the fruit should be consigned, with a free hand to distribute to the brokers he found best. The brokers selected should be spread all over England, and there should not be more than one in a small town and up to three in a city. The growers' representative should have the power to divert consignments to the Continent. The W.A. jarrah case was liked in London,

but many Apples were bruised: by using thinner wood there would be more "give" and the fruit would travel better: the liability of the wood to split could be overcome by wiring: wrapping paper with neat designs was recommended, as it added to the selling value.

Continuing his observations, Mr. Sampson commends the use of printed labels on cases; U.S.A. and N.Z. cases were neatly labelled. Pre-cooling on the Fremantle wharf was also recommended. New Zealand had the advantage of having the fruit organised under a Control Board system, with a representative in England—Mr. H. E. Stephens.

The Okanagan Valley, in British Columbia, was visited, and the Apple industry inspected. A Marketing Act is in operation, the broad principles of which are favorably referred to.

Mr. Sampson was evidently impressed by the methods of production and organisation in California: that State, however, was suffering from over-production of fruit. The advertising methods of the "Sunkist" citrus organisation and the "Sunmaid" Raisin growers were excellent. Co-operation among growers was a big force. The country farm advisers were doing good work. Much advantage had followed the campaign to utilise fruit in fruit juice drinks.

In summarising his impressions, Mr. Sampson says Australia cannot pursue a policy of isolation. We have wide-awake competitors in other parts of the world. We must tirelessly keep abreast of the latest methods. The essence of success in modern business is co-operation. Australia urgently needed tariff reform, the development of rural schools and col-

leges of agriculture, and the thorough organisation of the export of produce.

TASMANIAN FRUIT TRADE.

AT a meeting of the Tasmanian Fruit Advisory Board, Hobart, vigorous protests were made against the amended Federal regulations requiring fruit cases for export to be smooth dressed, and (after January 1, 1931), prohibiting the export of the plain grade of Apples.

Mr. F. H. Peacock (H. Jones & Co. Ltd.), said that growers in outback areas would not be able to secure planed ends, and that a great proportion of the Tasmanian fruit crop, remaining unshipped, would glut the Australian market. The plain grade of fruit which it was sought to prohibit was now realising 15/- per case on the London market.

It was decided to seek an interview with the Minister for Markets with a view to securing the suspension of the regulations.

Dusting for Pest Control. — The "Dri Spray" Products Co., of 223 Angas-street, Adelaide, South Australia, has a series of lines of interest to fruit and vegetable growers. Pest control is secured by dusting the plants with dry insecticides and fungicides. The firm has supplies of duster guns, lead arsenate, copper carbonate, copper sulphate, sulphur, nicotine sulphate. Full details are given in their pamphlets. Distributors are wanted in the several States and country districts, particulars being obtainable by writing to the firm.

Grubs and Eggs in Dried Fruit

are the terror of the fruitgrower, the grocer and the consumer. All dried fruits, nuts, etc., coming into Australia should be sterilised to kill all the grubs and eggs present. As all insect life and eggs

Can be Completely Eradicated

by the Hydro Vacuum process, Australian Dried Fruit could be so treated, and sent out in sealed containers to prevent re-infection. With such delightful, clean fruit, public confidence would be gained, resulting in mutual satisfaction and bigger trade. The old-time fumigating system has been rendered obsolete

By the Sterilizing Process

perfected in Victoria and patented through the Commonwealth. Strict tests under Government supervision prove that this process is absolutely satisfactory in the destruction of all insect life and eggs in dried fruits, nuts, grain, borers in timber, eelworm and bulbmite in bulbs. This effective system

Of the Hydro Vacuum Fumigation Co. Ltd.

is in operation at the Company's works, Ingles-street, Port Melbourne. The penetration of the lethal gases is complete, without opening cases or cartons. Further, the goods are in no way harmed. Full information is contained in a descriptive booklet obtainable free on request. This contains report of demonstration on September 4, before Federal and State Government officials.—Write for your copy now.
The Hydro Vacuum Fumigation Co. Ltd., officially registered as a Quarantine Station by the Plant Quarantine Department. Works: Ingles-street, Port Melbourne. Office: Temple Court, Collins Street, Melbourne, C.I. Phone: Central 2670.

The Fruit Trade

Market Reports and News Items

REPRESENTATIVE FIRMS, FRUIT MERCHANTS, AGENTS, EXPORTERS, Advertising in this Journal.

NEW SOUTH WALES.

Sydney.

Chilton, F., City Fruit Markets.
Louey Pang & Samuel Wong Ltd.,
Thomas St., Haymarket.

VICTORIA.

Melbourne.

Andrew, Fred J., 416 Lit. Collins St.
Cave, F. & Co., Melbourne.
Davis, J., Western Market.
Dennys, Lascelles Ltd., Temple Court,
Melbourne.
Millis, A., & Sons, Western Markets.
Lyster, G., Western Market.
Mills, J. B., & Co., Bank House, Bank
Place Melbourne.
Mumford, J. G., 449 Flinders Lane.
Pang & Co. Ltd., H. L., Little Bourke
Street.
Producers' Dist. Society, Western
Market.
Ross, J. W., Western Market.
Silbert, Sharp & Davies, Western
Markets.
Stott & Son, T., Western Markets.
Tim Young & Co. Pty. Ltd., Western
Market.
Vear, F. W., 49 William Street.
Woolf, G., Western Market.
Wholesale Fruit Merchants Assn., J.
D. Fraser, Temple Court, 428 Col-
lins St., Melbourne.

QUEENSLAND.

Brisbane.

Barr, A. S., Fruit Exchange.
Collard & Mackay, Fruit Exchange.
Comino Bros. Ltd., Fruit Exchange.
Cooksley & Co., Fruit Exchange.
Geeves, H. V., Fruit Exchange.
Robsons Ltd., Fruit Exchange.

TASMANIA.

Hobart.

E. R. Cottier Pty. Ltd., 88 Collins St.
Jones & Co. Ltd., H., Fruit Exporters.
Peacock & Co., W. D., Fruit Exporters.
and at London.

Launceston.

Bender & Co. Pty. Ltd., 100 Elizabeth
Street.

NEW ZEALAND.

Dunedin.

Co-operative Fruitgrowers' of Otago
Ltd.

GREAT BRITAIN.

London.

Margetson & Co., Ltd., Covent Garden.
Monro, Geo., Ltd., Covent Garden.
Pask, Cornish & Smart, Covent Gar-
den.
Ridley, Houlding & Co., Covent Gar-
den.

Hull.

White & Son Ltd.
The Port of Hull, London and N.E.
Railway. Rep., Major H. S. Cole.
c/o Burns, Philip and Co. Ltd., 7
Bridge St., Sydney.

Manchester.

The Port of Manchester, rep., W. J.
Wade, 8 Bridge Street, Sydney.

GERMANY.

Bremen.

Fruchthandel, Gesellschaft.

Hamburg.

Ashelmer, P. H., & Son, Fruchthof.
Lutten, J. H., & Sohn, Hamburg.
Stier, Aug., Fruchthof, Reps. J. B.
Mills & Co., Bank House, Melbourne.
Timm & Gerstenkorn.

AUSTRALIAN FRUIT IN GERMANY.

Germany.

Hamburg.

* Messrs. J. H. Lutten & Son report (6/6/29) that 52,000 cases of W.A. and Tasmanian Apples, ex "Leuna" and "Port Brisbane" were offered. W.A. Jons. 11/6 to 15/-, Cleo. 14/- to 19/-, Dunns 14/3 to 20/9. Tasmanian Jons. 7/- to 13/9, Cleo. 12/- to 15/6, Dunns 12/- to 14/9, Sturmer 7/6 to 14/- (according to color), L.P. 11/3 to 13/6 (later, the prices appreciated 2/- a case). W.A. Apples, ex "Port Brisbane," were of very good quality, and in perfect condition, especially the Dunns. Tasmanian Apples, quality good, and the fruit in average rather than good condition.

American Apples, Winesaps 13/3 to 16/3, Newtowns 11/9 to 15/-, all somewhat wasty.

Timm & Gerstenkorn, Hamburg, report (13/6/29):—W.A. Cleo. 17/9 to 21/6, Dunns 17/- to 23/-; Tasmanian Cleo. 14/- to 17/-, Jon. 11/- to 16/-, Sturmer 12/- to 16/-. Sizes 2½ and 2¾ Cleo. and Dunns, and 2¼ and 2½ Jon., brought the higher prices.

AUSTRALASIAN MARKETS.

Victoria.

Melbourne (1/8/29).

The following are the wholesale prices ruling at the Western Market:—Apples, good to choicest eating, 11/- to 16/- per case; few special higher; cooking, 10/- to 14/-; green Bananas, Queensland, special, 29/- to 30/-; choice, 28/- to 29/-; standard, 22/- to 27/-; plains, 17/- to 21/- per double case; Lemons, 7/- to 10/- per case; Mandarins, 10/- to 16/-; Common Oranges, 8/- to 10/-; Navel Oranges, 7/- to 11/-; a few special brands higher; Passion Fruit, 20/- to 24/-; few special higher; N.S.W., 15/- to 21/-; Pineapples, Queen, 11/- to 15/- per double case; Grape Fruit, 8/- to 14/- for fair quality, according to size, per case; few special higher.

The Victorian Central Citrus Association reports that sales were as follow:—Navels, average shed pack,

7/- to 11/-; other shed pack standards, 1/- to 3/- higher, according to pack and quality; Mandarins, best, 14/- to 16/-; others, from 11/-; Grape Fruit, 11/- to 16/-; some special higher; Common Oranges, 6/- to 10/-; some higher; Lemons, medium, 10/- to 12/-.

South Australia.

Adelaide (23/7/29).

Apples, eating, 16/- to 18/- per case; do., cooking, 14/- to 16/-; Bananas, 34/-; Lemons, 6/-; Melons, Pie, 6/- per cwt.; Nuts, Almonds, 10d. to 1/- per doz. lb.; do. (Brazil) Nuts, 12/-; do., Peanuts, 12/-; do., Walnuts, 11/-; do., Barcelona, 12/-; Oranges, Common, 8/- per case; do., Blood, 9/-; do., Mandarin, 16/- to 18/-; do., Navel, 12/- to 14/-; do., Poorman, 7/-; Passion Fruit, 30/-; Pears, eating, 12/- to 14/-; do., cooking, 8/-; Pineapples, 16/-; Quinces, 7/-.

Queensland.

Brisbane (25/7/29).

Local Fruit.—Oranges, best 10/- to 12/- a bushel case, others 7/- to 9/-; Navels, 10/- to 14/-; Mandarins, Emperors 16/- to 20/-, small 10/- to 14/-, Scarlets 12/- to 20/-, small 8/- to 10/-, Glens 16/- to 21/-, Feutrals 10/- to 16/-; Grape Fruit, 4/- to 5/- a quarter-case; Lemons, colored, 6/-, others 2/6 to 4/-; Limes, 2/6 to 8/-; Custard Apples, 3/- to 6/6; 2/- to 3/6 a tray; green 3/- to 4/-; Passion Fruit, 5/- to 8/- a quarter-case; Pineapples, smooth 6/- to 8/- a case, rough 6/-; Strawberries, best 12/- to 15/- a dozen boxes, others 9/- to 11/-, inferior 6/6 to 8/-. Imported Fruit.—Apples, Tasmanian, Jonathans 16/- to 18/- a case, S.P.M. 15/- to 17/-, S.T.P. 14/- to 16/-, G.F. 16/- to 17/-, Five Crowns 11/- to 13/-, Strawberry Pippins 14/- to 16/-, Dem. 17/- to 18/-, F.C. 14/- to 16/-, R.B. 15/- to 17/-, R.P.M. 14/- to 15/-; Pears, Tasmanian, B.P. 13/- to 14/-, B.B. 13/- to 14/-, Victorian Jos. 17/- to 18/-, W.C. 14/- to 15/-, B. Bergoman 13/- to 15/-, W.N. 17/-, Keefers 12/- to 15/-, B.P. 11/- to 15/-; Oranges, Navel, N.S.W., 11/- to 13/- a bushel case; mandarins, N.S.W. best 16/- to 18/- a bushel case, others 13/- to 14/-.

Tasmania.

Hobart (27/7/29).

Prices ruling for local fruit is as follows:—S.T.P. 5/6 to 10/-, S.P.M. 5/- to 13/-, R.B. 4/- to 8/6, States-

man 6/- to 11/-, C.P.M. (spotty) 4/- to 6/-, Democrats (spotty) 4/- to 10/-; F.C. 4/6 to 8/-, C.E. 5/6 to 6/-, Delicious 6/- to 13/9, M.F. 3/6 to 4/6, Jon., medium, to 6/6, small (spotty), and inferior grades 3/- to 5/- per case.

West Australia.

Perth (25/7/29).

Apples, Jonathan, dumps, 10/- to 15/6 (special to 16/3, small, from 7/-; Dunn's Seedling, 3/- to 8/6, 8/6 to 14/6; Rome Beauty, 4/6 to 8/-, 8/6 to 13/3; Delicious, dumps, 12/- to 15/3; Yates, 4/- to 7/-, 10/- to 16/- (special, to 18/3, others, from 5/-); Granny Smith, 5/- to 11/3; 12/- to 16/- (special, to 18/-, others, from 10/-); Cleopatra, 4/- to 9/-, 9/- to 14/- (others, from 5/-); Doherty, 4/6 to 7/-, 8/- to 14/- (special to 15/3, others, from 4/6); other varieties, 3/- to 6/-, 5/- to 13/-; Pears, flats, 4/- to 9/-, 6/6 to 10/-; Oranges, plain, 3/6 to 8/6; Navel, 6/- to 13/-; dumps, 10/- to 14/6 (special, to 15/3, some from 8/-); Lemons, 3/- to 6/- (special, to 10/6); Mandarins, 9/- to 14/- (special to 16/9, small, from 4/-).

New Zealand.

Dunedin (18/7/29).

Apples, Delicious, 7/6 to 12/6; Jonathans, 6/- to 8/-; Sturmers, 7/- to 10/-; others, 3/- to 7/-; cooking, 4/- to 7/-; dessert Pears, Winter Coles, 8/-; inferior, 2/- to 4/-; Winter Nelis, 8/-; other varieties, 2/- to 4/6, over-ripe unsaleable; Passions, 6/- to 8/-, Australian, 19/-; American Valencias, 40/-, Victorian Navels, 22/-; Lemons, Missions 55/-, Australian 25/-, New Zealand 22/-; Mandarins, choice, 22/-; Grape Fruit, 33/-; Poormans, 8/- to 9/6; Bananas, ripe, 30/-.

SPRAYS FOR FRUITGROWERS.

Various tested sprays to assist fruit producers are offered by the well-known manufacturers, William Cooper & Nephews, proprietors of the old-established Cooper sheep dip. The lines for fruitgrowers include Cooper's Arsinette, which is an arsenate of lead powder of value for combating the codlin moth. Other items advertised are Cooper's Dormol, a cream oil emulsion for spraying deciduous trees in the dormant season. Aboleum: A white oil emulsion for spraying citrus and other trees when in foliage; Cooper's Ostico, a sticky preparation, for trapping Dickyrice weevil and other insects. Supplies are obtainable from the firm's agents in the several States and New Zealand.

ACTION FOR LIBEL.

Overseas and Interstate Trading Co.'s Transactions.

George Victor Iversen Sues Adelaide Newspaper.

Plaintiff Awarded £5 Damages, But Has to Pay Both Costs.

MANY fruitgrowers in South Australia and in Tasmania have expressed regret at losses incurred through the transactions and liquidation of the Overseas and Interstate Trading Co.

The transactions of George Victor Iversen and the Overseas and Interstate Trading Co. were caustically criticised in the South Australian Parliament by Mr. E. H. Hannaford, M.P., and the Attorney-General, Mr. H. Hamburg. On publishing the report, alleging fraudulent transactions, the "Adelaide Advertiser" was sued by George Victor Iversen (previously a director of the O.I.T. Co.) for £5,000 damages.

In delivering judgment in the Supreme Court, Mr. Justice Piper traversed the transactions of the plaintiff and the O.I.T. Co. His Honor said that he found for the defendant newspaper on the plea of justification to the extent that the plaintiff, knowing that the O.I.T. Co. was then insolvent, fraudulently preferred himself as a creditor and paid moneys to himself. His Honor was satisfied that the plaintiff had brought the action intending to give false evidence.

For the libel, he would not assess damage at one farthing, but at £5: there would be judgment for the defendant newspaper against the plaintiff for the defendant's costs on the issue of justification.

Tasmanian fruitgrowers have suffered losses through the liquidation of the Overseas and Interstate Trading Co.

The northern agents of the company, Messrs. F. H. Stephens & Co., in writing to the Chief Horticulturist (Mr. Percy Thomas) state that the representative of the O.I.T. Co. purchased a considerable quantity of fruit in Tasmania, and also was entrusted with consignments. A bank report was at first satisfactory, but later, finding the firm unreliable, the consignments were diverted. They Stephens & Co.) had paid the growers for the purchased fruit, but had not recovered from the O.I.T. Co. For the consignment fruit they requested

the liquidators to hold the money in Court and pay growers in full, but the liquidators replied stating that the consignment growers could only claim as ordinary creditors. Messrs. Stephens & Co. expressed the opinion that the company would pay about 2/- or 2/6 in the £.

A NEW SPRAY.

Used on Citrus and Deciduous Trees, Vines, Etc.

An American spray which has had a good reception among Australian fruitgrowers is known as "Destruxol." Growers of both citrus and deciduous fruits have expressed appreciation. The manufacturers point out that this spray has been evolved after much patient investigation, and summarise its values as follows:—"Destruxol" destroys both insect pests, scales, and fungoid diseases. It can be applied with safety at any time of the year, and does not burn fruit or foliage; it is highly concentrated; fewer sprayings are required. For codlin moth it is recommended to use 4 lb. arsenate of lead and 1 quart "Destruxol" to 200 gallons of water, giving the calyx application when the petals have fallen and the calyx lobe of the king bloom, which is the centre bloom of the cluster, is taking the shape of a cup. "Destruxol" is a vegetable base oil, non-poisonous, and can be sprayed on vegetables and fruit with safety. For downy mildew and powdery mildew of vines it has proved very effective.

Information and supplies are obtainable from the agents in the several States, as quoted in their advertisement, or from their factory representative, whose address is 86 Watson House, 9 Bligh-street, Sydney, N.S.W.

INSECT AND FUNGOID PESTS.

Control by Dusting.

Interest is maintained in the system of obtaining pest control by the dusting method. Attention is directed to the advertisement of Raido Dusts in this issue, wherein details are given of the control of insect pests and fungoid diseases on fruit and vegetables. Dusting is practised largely by the fruitgrowers and market gardeners around Adelaide. Full particulars are obtainable from Raido Dusts, Henley Beach-road, Fulham, near Adelaide, S.A. Well-established country and interstate agents are desired.

SELLING CANNED PEACHES.

Suiting the Consumer.

A Californian Survey.

(From a Special Correspondent.)

CALIFORNIAN growers of Peaches for canning are making eager efforts to extend their home market. What does the housewife want in the way of canned fruits and to what extent is it possible to suit her taste? Cannery and growers in California recently put up the money to pay the cost of a comprehensive study. Sixteen hundred housewives were interviewed at their homes. Nearly a thousand indicated their opinions at stores and clubs. Over a thousand cans of Peaches were bought off the shelves and sent for examination to University and Department of Agriculture laboratories. Information was obtained directly from wholesalers, chain-store buyers, retailers and agents.

This survey of the home market is held to have yielded results that will provide valuable guidance. Approving press comments again direct attention to the special report of the Development and Migration Commission on the Canned Fruits Industry of Australia. That report pays special attention to the cultivation and extension of the home as well as the overseas market, and constitutes a kind of text book of value to those interested in the industry. The Californian enquiry was preliminary to an improved organisation and management of the fruit growing industry somewhat similar to that dealt with by the Commission.

The main facts ascertained by the Californian study are summarised thus:—

Retailers still charge too much for canned Peaches.

Housewives put quality before price, but the labels fail to guide them—they do not get the quality they think they get.

The housewife would appreciate labels which told her the size and number of halves in the can, and whether the syrup was heavy, medium or light.

Bananas and canned Pineapple are active competitors of canned Peaches; 80 per cent. of the housewives questioned buy canned Peaches; 86 per cent. buy canned Pineapple; and 96 per cent. buy Bananas.

Chain stores advertise Peaches and prefer nationally advertised brands; independent stores do not do so much advertising—they handle more private brands of wholesalers and charge more for lower quality.

Most of the cannery live up to the grade claimed for their product, but consumers are poorly informed about grades.

Generally speaking, the grade of canned Peaches was found to be what the Californian cannery claimed it was, but it was evident from the study that there were too many low-grade Peaches going to the market. No fewer than 450 different brands of California Peaches came under the eyes of the investigators. The average retailer had four or five different brands on his shelves. Canned Peach sales were found to be increasing faster than Pineapple sales, probably owing to cheaper prices for Peaches, but Pineapple sales did not fluctuate as violently in the retailers' hands.

SAN JOSE SCALE.

Winter and Spring Treatment.

San Jose scale, if neglected, will very quickly kill out main limbs of trees attacked and spread throughout the orchard. Once it becomes widely established in an orchard it is very difficult absolutely to eradicate, and will entail annual spraying. If, on the other hand, it is detected early and promptly dealt with it can be prevented from ever becoming widespread.

Outbreaks generally occur first on odd trees scattered through the orchard, and it is worth while giving a special treatment when the number of affected trees is limited.

Prune the affected trees early and place the prunings at once into the lighted burner, taking care when pruning these trees that the pest is not carried to clean trees by the pruner's clothes, hat, or pruning tools. The clothes should be washed or thoroughly brushed and the tools thoroughly cleaned with neat kerosene after completion of the pruning of the affected trees and before they are allowed to come in contact with clean trees. The affected trees should then be given a soaking application of miscible oil, 1 part to 25 of water by volume.

As a soaking spray applied to big trees takes a large quantity of spray, much of which collects in a pool at the butt and is liable to damage the bark at the collar at ground level, it is best first to spray the butt, then to throw in soil around the butt, give the

tree a soaking spray, and when this spraying is completed throw the oil-soaked soil away from the butt to the centre of the row. As it is probable that the surrounding trees have a few specks of scale that have not been detected, the whole block of trees, including those which have had special treatment, should receive a normal application of miscible spray oil (1 part to 25 of water by volume) at the end of the winter and before they start into growth.

If the infestation has been allowed to become widespread the above special treatment may not be practicable and one is obliged to rely on an ordinary application of spray oil. The first season it is advisable to give two applications of oil towards the latter part of the winter, one of which may be increased in strength to 1 to 20 of water by volume. If it is apparent during the following growing season that the pest has been almost annihilated, then only one application of oil need be given at the end of the following winter.

The N.S.W. Department of Agriculture has generally found miscible spray oil more effective than lime-sulphur for the control of San Jose scale, but some growers prefer the latter spray. If using lime-sulphur it should be used full winter strength and should be applied after the buds commence to swell at the end of the winter. The application should be thorough, not neglecting the ends of the twigs.

TEN HEALTH RULES.

Ten commandments of health suggested by Miss Marie Leonard, dean of women at the University of Illinois, are:—

Eat less; chew more.
Ride less; walk more.
Clothe less; bathe more.
Worry less; work more.
Idle less; play more.
Talk less; think more.
Go less; sleep more.
Waste less; give more.
Scold less; laugh more.
Preach less; practice more.

HER FIRST TRIP ABROAD.

Monday.—Everybody came down to see me off. Everybody is lovely.

Tuesday.—Am having a fine time. Met the captain of the ship.

Wednesday.—Captain tried to kiss me. I indignantly refused.

Thursday.—Captain is wild with anger. He says that unless I consent he will blow up the ship.

Friday.—I saved the lives of five hundred people.

Clean Fruit Assured

When Neptune Sprays are Used

NEPTUNE
Prepared Spraying Oils
"A" and "C"

NEPTUNE
Lime Sulphur Solution

NEPTUNE
Spray Spreader

BERGER'S
Arsenate of Lead
(Paste and Powder)

BLAIR'S
Bordeaux Powder

GENUINE
Black Leaf 40

SICILIAN
Sublimed Sulphur

AUSTRALIAN
Powdered Sulphur

MAXIMUM RESULTS—
MINIMUM COSTS



All NEPTUNE SPRAYING MATERIAL can be obtained through Agencies and Associations throughout Australia or direct from

Neptune Oil Co. Ltd.

River Street, Richmond, Victoria

BRANCHES

365 Kent St.,
Sydney.

133-5 Mary St.,
Brisbane.

Worand's Build-
ings, Grenfell
St., Adelaide.

96 St. George's
Terrace,
Perth.

c/o Murdoch
Bros. Pty. Ltd.,
Market Place, Hobart.

c/o Taylor Bros.
Charles St.,
Launceston.

"CLEAN FRUIT" PAMPHLET & SPRAY CALENDAR SENT ON REQUEST.

Chilean Nitrate of Soda

Promotes rapid growth. It does not cause soil acidity or sourness even after continuous use. NATURE'S own fertiliser—has been absorbing for centuries the life and health giving properties of the solar rays.

Is entirely soluble—clean to handle and easily applied either broadcast or mixed with water and used as a liquid fertiliser. Possesses the chemical nature of the purest synthetic material plus the **GROWTH PRODUCING PROPERTIES** of a natural product.

RELEASES valuable **POTASH** in the soil. Has no secondary ill-effects and the **LIME CONTENT** of the soil is preserved.

You will be Pleased with Results

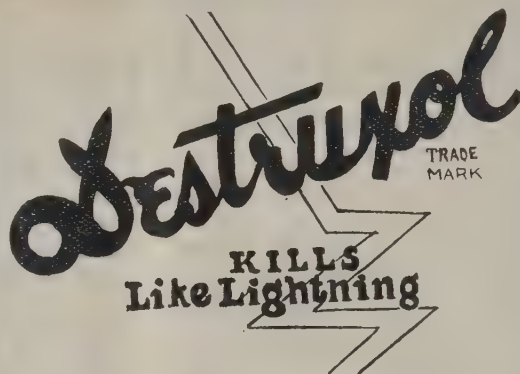
Sold on a guaranteed purity of 95 per cent., and contains 15½ per cent. **NITROGEN**.

Obtainable at All
Fertilizer Merchants

Any difficulty in procuring supplies, apply to:—



CHILEAN NITRATE of SODA
G.P.O. Box 2037 L
SYDNEY



The All-in-one Spray

**Cannot Injure
Fruit or Foliage**

1. Whereas heretofore certain sprays were used in the elimination of certain insect pests, **DESTRUXOL** will eliminate several pests with one application at one and the same time.

2. Where other sprays must be used at certain seasons or times of day to avoid damaging fruit and foliage, this spray may be used at any time **WITH ENTIRE SAFETY**.

3. While other sprays must often be used five or six times per season, **DESTRUXOL** requires but **ONE**, or at most, two applications.

4. Furthermore, **DESTRUXOL** is sold in concentrated form, requiring only the addition of water to make the finished spray.

5. The **ECONOMY** of **DESTRUXOL** can be demonstrated with one application. Its effect can be shown in any affected orchard, field or garden in a period ranging from 30 minutes up to 5 hours in very exceptional conditions.

DESTRUXOL EMULSION

a stable emulsion versus heavy quick-breaking MINERAL OIL EMULSION and the reason why the **DESTRUXOL EMULSION** has been accepted by the growers of citrus and deciduous fruits, vegetable growers and lovers of flowers.

DESTRUXOL is a contact and fumigating spray. It has been distributed for years and is recognised as one of the few materials in the line of insecticides on the market to-day able to combat insect life in the stage of migration without doing damage whatsoever to fruit, bloom or foliage under any climatic condition, whether favorable or adverse. It has done invaluable service, not only in the temperate regions, where the deciduous fruits abound, but for the past few years also in the semi-tropical regions, where the Citrus fruits prevail and where it has been used successfully in the combating of various kinds of Scale in the migratory state, as well as of other insects. It is paramount in the control of Mealy Bug, Red Spider, Thrip, and all species of Aphids.

Use Destruxol Emulsion for fine citrus crops
Extra quality fruit at no extra cost
Destruxol saves time, labor, money

DESTRUXOL CORPORATION LOS ANGELES

Factory Representative now in Australia to negotiate with agents—

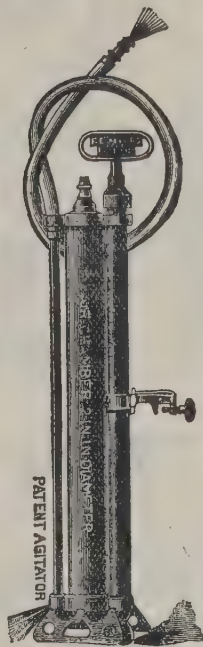
**WATSON HOUSE,
9 BLIGH STREET, SYDNEY.**

SPRAY PUMPS

For
BUCKET, BARREL or VAT

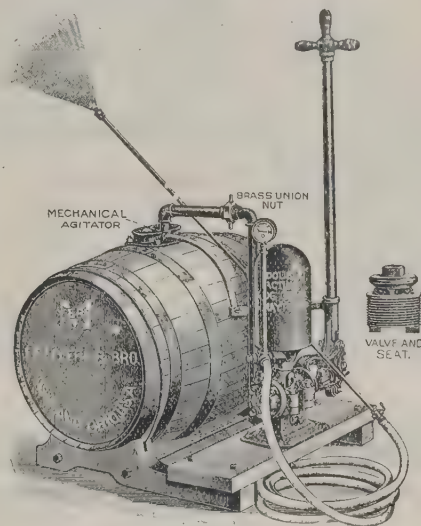


"THE MYSTO"
Knapsack Spray Pump,
with Lead-coated Copper Con-
tainer, Inside or outside pump.
Price, £5/5/-.



**MYERS "LITTLE
GIANT,"**

With Malleable Foot
Rest, complete with one
each "Sprinkling" and
"Imperial" Nozzles.
Price, 25/-.



MYER'S Cog Gear Spray Outfit.

Comprising: No. R309 Cog Gear Pump with
2in. removeable Brass Cylinder, Brass Valves
and Ground Bevel Brass Seats and Hemp-
packed Plunger, Pressure Gauge, Double Cut-
off and Strainer for Suction Pipe. Mounted
on Skids with 50-gallon Cask and Mechanical
Agitator. Price, without hose or fittings,
£14/10/-; or Pump only, with Gauge, Double
Cut-off and Strainer for Suction Pipe (no
hose or fittings), price, £9/10/-.



MYERS No. R309

Cog Gear Spray Pump.
2in. Removeable Brass
Cylinder. Brass Valves and
Seats. Complete with Pres-
sure Gauge, Double Cut-off
and Strainer for Suction
Pipe. Price, £9/10/-.

SPRAY PUMP FITTINGS

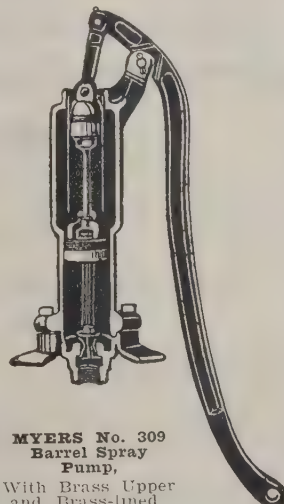
Special Spray Hose—
For Hand Pumps, 1/3 ft.;
for Power Pumps, 1/6 ft.

Hose Connections (1 Lead
only)—4/3 set.

Extension Pipe Rods—
2 ft. Lens, 1/6 ea.; 4ft.
Lens, 2/6 ea.

G.M. Wheel Valves—1/4 in. for
Pipe Rods, 3/9 ea.

Barrels (painted)—Capacity
about 50 gallons, 14/- ea.



**MYERS No. 309
Barrel Spray
Pump,**

With Brass Upper
and Brass-lined
Lower Cylin-
der, Brass Valve and Seat,
complete with Mechanical Agi-
tator, Suction Pipe, and Suc-
tion Pipe Strainer.
Price, £4/5/-.

Full Particulars and
Prices of other types
of Hand Pumps, Power
Pumps, and complete
Power Outfits, sent on
application.

WELCH, PERRIN & CO. Pty. 48-56 Queensbridge Street
Ltd. South Melbourne, S.C.4.



ORCHARDISTS

Spraying is essential, and your best Insurance. Therefore it is necessary to use only the Best Sprays obtainable.

The successful grower uses

"Elephant" Brand Sprays Only

Now is the Time to Apply Your Oil Spray

WE CAN SUPPLY

Prepared Red Oil
Unprepared Red Oil
Prepared Crude Oil

ORDER NOW

Bordeaux Mixture Powder
Bluestone
Lime Sulphur

WRITE FOR PRICES AND PAMPHLET

JAQUES PTY. LTD.,

are the Actual Manufacturers and Distributors of "Elephant" Brand Sprays
Manufacturing Chemists, MADDEN GROVE, BURNLEY, E.I., MELB., Vic.

Telephone : J 2008.

Agents : Seedsmen, &c.

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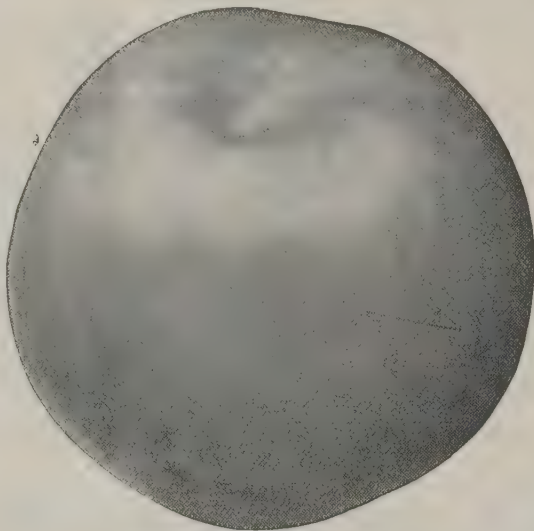
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Jonathan.

Do Not Hesitate !

for the saying is: "He who hesitates is lost."
This is equally true should your order be delayed for these

Special Fruit Trees

FOR 1929 PLANTING

Strong, Healthy, Lusty Fellows with Stamina for their job of Case-fillers later on!

Place Your Orchard on a Higher Plane by planting these distinctive outstanding fruit trees of merit. For 63 years—with hard toil—many disappointments—many successes—we have produced high-class trees unequalled in Australasia—so we ask you to share in our success by having nothing but the best that can be produced.

A postage stamp will bring you any further information and a copy of Free Illustrated Informative Catalogue, on application.

JOHN BRUNNING & SONS
SOMERVILLE NURSERIES - SOMERVILLE - VICTORIA - AUST.
Established 1866. Code: Bentley's Complete Phrase.

"FRUIT WORLD OF AUSTRALASIA."

Representing the Deciduous, Citrus and Dried Fruits Industry of Australasia.

Published the First of Each Month.

Editorial and Management Notices.

Articles and Photographs.—The Editor will always be very pleased to receive articles and photographs for publication. Articles on spraying, pruning, drainage, marketing, and other cultural matters, and reports of meetings, are welcomed. Please write on one side of paper only; include name and address (not necessarily for publication). Press matter sent in an open envelope, marked "Printers' MSS." postage rate: 2 ozs., 11d. Photographs, if sent in an open-ended package, marked "Photos. only," will travel at 2 ozs., 11d. A short description of the photos. should be written on the back.

We do not hold ourselves responsible for the views expressed by our correspondents.

Subscriptions.

The annual subscription, post free within Australia and New Zealand, is 5/6. All other places, 10/6, post free. New subscriptions can commence at any date. Subscribers should notify us immediately of any change of address.

Renewal Subscriptions are due during the last month of the term covered by the previous payment, and unless notified to the contrary, the fact that the subscriber continues to accept delivery of the journal, is taken as proof that continuation of the subscription is desired, and we will continue to send regularly until notified in writing or copies are returned through the post.

Advertisements.

"The Fruit World of Australasia" is an advertising medium of proved value. Advertising rates may be had on application to our Head Office, or to agents in the various States

Changes of copy for advertisements must be in our hands on or before the 12th of the month prior to publication.

Readers are asked to make their purchases from our advertisers, who cover all lines of interest to orchardists, at the same time mentioning this journal. By so doing, the grower, the advertiser, and this paper will benefit.

Every care is taken to publish advertisements from reliable houses only, and to see that advertisements of an undesirable nature are not published. The management reserve the right to refuse to publish any announcements that they may regard as undesirable, either from the point of view of the goods offered or in the wording of the advertisement notwithstanding the fact that a contract may have been entered into for the use of a certain space.

HEAD OFFICE:

**78a VICTORIA STREET,
Melbourne, Victoria.**

Address all correspondence to
Box 1944 G.P.O. Melbourne

SYDNEY OFFICE:

BOX 2147 L.L., G.P.O.

FRANK CLARKE, Representative.

British Office: Harvey H. Mason, 1 Mitre Court, Fleet Street, London, E.C., England.

R. E. BOARDMAN, A.F.I.A., A.A.I.S.,
Managing Director and Editor.

E. H. WRAGG, Secretary and Advertising Manager.

Tasmanian Director:

Hon. L. SHOOBRIDGE, M.L.C.

Federal Arbitration Court.

The Federal Arbitration Court has to go according to a pronouncement by the Commonwealth Ministry. The decision to do away with the Arbitration Court was unanimous in the Cabinet. The Federal Arbitration Court has proved a costly and unworkable experiment, the cause of much industrial unrest, and particularly oppressive to primary producers. The many thousands of pounds spent by fruitgrowers in defending claims in the courts, if put into organisation or research work, would have yielded valuable results.

The State Governments will create the machinery for dealing with the control of industrial matters.

Boys flying kites,
Haul in their white-winged birds.
You can't do that way, when you're flying words.
Thoughts unexpressed may sometimes fall back dead,
But God Himself can't kill them, when they are said.

When gloom comes, entertain it with a smile.

Disappointment should always be taken as a stimulant, and never viewed as a discouragement.

Fruitgrowers' Cool Stores Association.

Important Conference at Melbourne.

Cool Storage is one of the Biggest Factors in Stabilising the Fruit Industry.

THE thirteenth annual meeting of the Fruitgrowers' Cool Stores Association of Victoria, was held at Anzac House, Melbourne, August 13 and 14. Cr. W. Mock, J.P., presided.

Delegates attended as follows:—

Blackburn: J. Stevens, F. Moore, A. J. Harris, G. C. Karnaghan, A. Powell. **Burwood East:** W. Mock, G. C. Karnaghan, T. French, A. R. Fankhauser. **Croydon:** H. L. Tomkins, C. A. Hochkins, R. Langley. **Diamond Creek:** R. J. Lorimer, Albert E. Collins, R. M. Finlay. **Doncaster Central:** R. E. Petty, Ed. Daws, J. J. Tully, J. Sugden. **Doncaster East:** J. Robinson, A. E. Ireland, W. Johnston. **Doncaster West:** John Tully, A. T. Tully, T. F. Cullen. **Harcourt:** J. H. Lang, E. Pritchard, A. Frankling, H. M. McLean, A. G. Gunner. **Hastings and District:** J. M. Watt, G. Sprague. **Mount Waverley:** G. Coleman, W. Farquhar, E. Street, D. Peck. **Orchardists:** J. J. Tully, August C. H. Thiele, Frank Petty, G. S. Grover, G. Scott. **Pakenham:** T. E. Butler. **Portland:** W. J. Williamson, W. M. Williamson. **Red Hill:** G. W. Brown, A. Noel, Reg. Sheehan. **Ringwood:** J. W. Barrett, W. Mackinlay, A. J. Tann, J. G. Aird, F. C. Pyke. **Somerville:** T. W. White, H. H. Hawken. **Templestowe:** R. G. Hillhouse, A. R. Chivers, R. Read. **Tyabb and District:** W. P. Hutchinson, H. J. Willoughby, Major Wilson, P. Val. Kerr, F. Stockton, H. B. Jackson, Lew. Cole, W. Shepherd, P. H. G. Webb. **Wantirna:** C. Wallace, E. Finger, F. J. Byrne. **Elinora Orchards:** A. P. Stott, F. Kolbe. **Hurstbridge:** T. E. Butler. **W. C. Thomas & Sons:** E. H. Hatfield, E. J. Bayliss.

Visitors.—The Hon. the Premier, Sir Wm. McPherson, M.L.A., Lieut.-Col. G. H. Knox, M.L.A., Messrs. E. W. Greenwood, M.L.A., W. H. Everard, M.L.A., Dr. W. J. Young (Council Scientific and Industrial Research), Mr. J. M. Ward (Superintendent of Horticulture), Mr. G. B. Tindale and Mr. D. B. Adam (Science Branch, Dept. of Agriculture), Mr. J. Hepburn (Government Cool Stores), W. Young and S. H. Hardcastle (Institute of Refrigeration), W. A. Webb and J. W. Aspinall (Metropolitan Fruitgrowers' Association), A. W. Schwennessen and

Mr. Kitchen-Kerr (Citrus Association), H. G. Colombie (Victorian Fruit Marketing Association), Messrs. Cyril F. James, J. M. Jacobs, F. S. Briggs, B. Finnigan, T. R. Ashworth, P. H. Shaw.

Apologies for Absence.—Mr. W. L. Langslow, M.L.A.; Mr. A. L. Walter, M.L.A.; Mr. B. Kelly, Chairman Publicity Board, Victorian Railways; Mr. R. Crowe, Superintendent of Exports; Mr. H. V. Smith, Batlow, N.S.W.; Mr. A. E. Webb, Bender & Co. Pty. Ltd., Launceston, Tas.; Messrs. W. Lipscombe, H. Pump, W. H. Murray, G. F. Fankhauser, F. Thomas, Eb. Eagle, C. H. Coleman, J. D. Grant, J. C. Neumann, H. Gosbell.

After roll-call, a motion of sympathy was carried, all delegates standing, to Mr. F. Thomas, M.A., who recently lost his wife; to Mr. W. Lipscombe (Croydon), C. Neumann (Wantirna), who suffered similar bereavements; to Mr. L. J. Pepperell in the loss of his brother.

The minutes of the previous Conference were taken as read, and confirmed.

New Members.—Messrs. W. C. Thomas & Sons, Tynong, were elected new members, and welcomed by the Chairman.

Australian Conference of Fruitgrowers.—Col. Herrrd, Secretary of the N.S.W. Fruitgrowers' Federation, wrote, advocating the calling of an Australian Conference of Fruitgrowers.

Mr. R. E. Boardman, Hon. Secretary, Australian Conference of Fruitgrowers, said that at the All-Australian Fruit Show, to be held at Hobart in May, a session of the Australian Conference would be held.

Mr. J. M. Ward, Superintendent of Horticulture, said that in response to a request from Tasmania, the Minister for Markets had decided to call a conference of Australian fruitgrowers shortly.

Mr. J. H. Lang (Harcourt) said it was desirable that there should be a growers' conference annually, apart from any conference called by the Government. He moved that this Association support the Australian Conference of Fruitgrowers, and that the appointment be left to the Executive.

Mr. John Tully (Doncaster) seconded, and the motion was carried unanimously.

Fruit for Hull.—Mr. B. C. Criswick, acting representative of the London and N.E. Railway, wrote, suggesting that a special chamber be reserved for a full shipment to Hull. Decided to meet Mr. Criswick in conference in September.

Annual Report.

IN THE ANNUAL REPORT, which was signed by the President, the year's work was reviewed. There were three new members—Ardmona, Bender & Co. (Launceston), and W. C. Thomas & Sons (Tynong). J. W. Bailey and the Narre Warren Stores had withdrawn.

The Apple advertising campaign last season was successful; the Railways and Agricultural Departments rendered great assistance. Messrs. C. H. Holmes (Railways) and J. M. Ward (Superintendent of Horticulture) were especially thanked. A recipe booklet had been prepared by the Railway Department, in conjunction with the Principal of the Emily McPherson School of Domestic Economy: this was at present held up in view of the short season, and instructions were awaited. On account of continued bad seasons and crop failure in 1929, the Association again approached the State Treasurer, on behalf of several stores, for extended time for payments. The Treasurer deferred payments of redemption instalments until the end of each respective loan in most instances, while interest was also deferred and capitalised in others. The Treasurer added a rider that he considered that directors of these stores should give consideration to the adjustment of charges in normal seasons so as to provide for losses in unfavorable seasons.

The thanks of the Association were due to Mr. J. W. Barrett for the compilation of the annual graph of comparative working costs.

Pre-cooling.—There was very little response to the Association's effort to arrange a trial shipment of pre-cooled Apples: the extra cost was slight—19/- per truck for ice used in railway transit.

Australian Conference.—The Minister for Markets had been requested to convene a conference re export and interstate trade, but letters from the other States did not warrant the calling of this conference at present.

The committee had drafted proposals for extending the Association activities, also for a proposed fruit and flower show. Particulars of electric power costs had been compiled, and were submitted.

Blackburn had won the Association shield at the last Royal Agricultural Show, and was to be congratulated. There were five entries. Every store was asked to stage a pyramid.

The engine-drivers' case, in which several stores were cited, had been adjourned.

Records of monthly holdings of fruit in store from July to December for 1927 and 1928 were complete: this made a valuable record for comparative purposes. Secretaries were asked to advise the Association promptly after the 1st of each month re total holdings being sent to each store.

Each store was requested to send its full quota of delegates to each meeting.

The balance-sheet showed a credit balance of £54/6/10 in the general account, and £156/6/4 to the credit of the Apple advertising campaign fund.

Apple Advertising Campaign.

THE REPORT of the Apple Advertising Campaign Committee was presented, the Chairman of which was Mr. J. M. Ward. The publicity methods included window dressing competition, Apple recipe cards, wireless broadcasting, articles in the School Paper, railway posters and calico signs, newspaper and film advertising, cooking demonstrations, barrow competitions.

The sum of £549 had been received in subscriptions, including £412/10/- from cool stores, £69/9/- from the Railways Department, and £50 from the Victorian Government, plus some contributions from outside sources. The expenditure amounted to £391, leaving a credit balance of £158.

Insurance.

Mr. F. S. Briggs, Chairman of the Fire Underwriters' Association of Victoria, said that the proposal for insurance was an important document. Any misdescription of buildings, stock, machinery, etc., would invalidate the policy. Cool store directors should keep a copy of the specifications of their buildings, etc., and keep a memo. of any additions. Electric light should be installed by a competent engineer, and the insurance companies should be notified of any installations or alterations in lighting or power systems. The fusing of electric light was not covered by usual policies, but it could be by paying an added premium. For fruit it was possible to have a composite policy.

Directors could only ensure goods—say fruit—in which they had an insurable interest. In most instances the fruit was not owned, held in trust or on commission for growers, and the directors could not be said to have an insurable interest in the fruit in the store. Legal advice had been obtained, however, and directors could obtain the necessary insurable interest by obtaining the signatures of the shareholders to an approved circular letter. Fruit could be insured on a sliding scale, according to its grade and market value. The average clause is not applicable unless specifically stated.

If goods were insured for £1,000, and there was total loss by fire, the amount recoverable would be £1,000—the amount of the policy. Now, take the case of a partial loss. Fruit in store, value £2,000; insurance £1,000. Say a fire caused £500 worth of damage; as the growers had insured for half the value, the amount recoverable would be half of the amount of the damage, namely, £250, if subject to average. If not subject to average, the amount recoverable would be £500. If insuring in one company not subject to average and a policy were taken out with another company subject to average, that automatically made the first policy subject to average.

If a shareholder were to separately insure his own fruit subject to average while the directors had the rest of the fruit insured not subject to average, it would be an extremely difficult matter to effect a settlement. Every grower should keep a careful record of his own fruit in store, of quantities going in and that taken out. This should be in addition to, but should agree with, the official store records in order to have a definite statement should a fire occur.

Explosion.—Insurance companies were ordinarily not liable for fire caused by explosion; both, however, could be covered in the policy. Further protection could be gained by insuring the damage from total or partial disablement of machinery. Records should be kept in a separate building, say with a banker.

Accident Insurance.—Workers' compensation was compulsory, and it was necessary for growers to insure the risk with a licensed company. All employees receiving £360 or less must be insured, or else there was a heavy penalty. For higher paid employees, there was no compulsory insurance, but any case for injury would come under common law. Mr. Briggs concluded by recommending growers to have personal

accident policies' guarantees against defalcation, etc.

Mr. W. J. Williamson, Portland, asked if the Underwriters' Association would legally accept the circular or letter to shareholders giving directors an insurable interest in the fruit.

Mr. Briggs replied that this could be arranged with the individual insurance company concerned.

Mr. Lang, Harcourt, said that the articles of the Harcourt Cool Store Company definitely absolved the management from any loss. If directors charged rent, would that be an insurable interest, charging, say, 1/- per annum?

Mr. Briggs: Probably. It is a debatable point, and legal opinion is necessary.

Mr. J. G. Aird said that some time ago there was a fire at the Ringwood store, damaging the roof. The advantage of being insured as a whole by the company was evidenced, because instead of the fruit having to be taken away and stored elsewhere, the insurance company at once put in a temporary roof over the building, the expenses being some £400, whereas the fruit damaged had not totalled 50 cases. The validity of the policy was not questioned. He thought the company had acted very fairly. (Hear, hear.)

Messrs. F. S. Briggs and B. Finnigan were thanked by the Conference.

Store Working Costs.

Mr. J. W. Barrett presented the annual graph of comparative working costs. Mr. Barrett was thanked for his services and a request was made that copies be sent to each store.

Official Opening.

THE PREMIER OF VICTORIA, Sir William McPherson, said the Government desired to help to put the fruit industry on a firm basis. Mr. H. W. Clapp, Chairman of the Victorian Railway Commissioners, had probably done more than any other single individual for the fruitgrowing industry. He (the Premier) recommended the extension of kerb markets. In 1928 there was a crop of 8½ million bushels of Apples, of which Victoria had exported one million cases. This year the production was 500,000 cases, and the export under 14,000 cases. A bumper crop was expected in 1930. The Treasury had advanced £280,000 to cool stores, of which £200,000 was still outstanding. The Government had done right to help the growers. He had no doubt that with good seasons the growers could discharge all their obligations. He advocated building up reserves during good seasons.

The primary industries were of the greatest importance to Australia.

A vote of thanks, proposed by Hon. E. W. Greenwood, M.L.A., seconded by Mr. Knox, M.L.A., supported by Mr. W. H. Everard, M.L.A., was carried to the Premier with enthusiasm.

The Luncheon.

After the loyal toast had been honored, Mr. J. H. Lang proposed the toast of Parliament, and in doing so emphasised the value of the primary industries. Australia had a national debt of £1,000,000,000, and the interest bill totalled £50,000,000 a year: this had to be paid for by exports. Of Australian exports, 97 per cent. were primary products. The plea of more production was not justified; more markets were needed and more well-being among the primary producers.

In replying, the Premier, Sir Wm. McPherson, said cool storage development marked an epoch in the fruit industry, enabling the continued and regular supplies at reasonable price. Better organisation was needed among fruitgrowers, especially to develop the export markets. There was an illimitable market in England, if we packed the fruit as they want it. More fruit should go to Glasgow.

Mr. W. H. Everard, M.L.A., emphasised the value of organisation and the development of export and home markets.

Mr. Knox said the Government contemplated passing a Marketing Act to enable growers to run their own industry. This could be introduced if growers had an organisation for making effective representation to the Government.

Mr. E. W. Greenwood, M.L.A., said no Marketing Act was of value unless costs of production could be reduced to enable our produce to sell on the export markets. The Arbitration Court had to go. Including municipal, State, and other debts, Australia owed £2,000,000,000.

In responding to the toasts to the visitors, proposed by Mr. Tully, responses were made by Messrs. J. M. Ward, J. Hepburn, A. W. Schwenne-son, W. A. Webb, and H. G. Colombie.

Portable Container for Fruit Transport.

Mr. J. M. Jacobs, of the Western Market, Melbourne, said a uniform gauge on the railways was desirable. At the present time the discharging and re-trucking of fruit at border stations was very harmful. To obviate the difficulty, he suggested using a refrigerated container or portable cool chamber for holding 90 to 100 cases of fruit, such container to be lifted bodily by electric or other power

from one truck to the other at the break of gauge.

The interior measurements of this suggested container should not be more than 22 feet long by seven and one half feet wide, while its height should reach 10 feet nine inches. Its composition should be perfectly insulated so as to make it impervious to the outer atmosphere, and if it is to be ice-cooled, it will need a zinc box at each end capable of containing one half ton of ice with a safety get-away for the water. Electric cooling would be preferable, if not too expensive, as it would avoid any possibility of moisture and would not need to be continuously recharged, as would be the case were ice used. It was estimated that one container, fully loaded, and ice charged, would approximate 7½ tons (allowing 4½ tons for the fruit and 3 tons for the container). For its construction, he suggested teak framing, cowhairs packing, and galvanised iron lining, hoop pine, T. & G. Such containers could be placed side by side two in an open truck, as open trucks of suitable dimensions were available on all State railroads. Their cost might be roughly estimated at £168/10/- per container.

Such container would enable choice Strawberries, Cherries, Peaches, and Apricots grown in Victoria to be sent to North Queensland or Western Australia. He had enjoyed Satsuma Plums grown in California and delivered fresh in London. They took thirteen days to reach their destination, traversing as they did the six days' journey from the Pacific to the Atlantic, thence by steamer to Liverpool in cool chamber, and finally they were delivered at Covent Garden in perfect condition. The packing was in shallow punnets, which were nested in padlocked crates. South Africa is also consigning her most delicate fruits to England, the journey occupying 14 days.

After conveying, say, choice Victorian fruit to Queensland, the containers could be used for bringing tropical fruits south. The extra cost for freight would be made up by the enhanced value of the fruit. There would be no loss from damage at border stations. The tray would supersede the clumsy bushel case in the interstate marketing of choice fruits. Woodwool and cotton wool would become factors in packing.

Continuing, Mr. Jacobs said he considered that this ice chamber could also be used for being carried on the decks of steamers to New Zealand, Fiji, Hawaii, or Colombo.

In the discussion that followed, Mr. J. H. Lang said he would be interested

to hear of further details of the proposal by Mr. W. Ranger, of Queensland, re the developing of power for cold storage from the axles of railway trucks while in transit. A vote of thanks was carried to Mr. Jacobs, and it was decided to refer the matter to the next quarterly meeting, when a committee could be appointed to enquire into the container proposed by Mr. Jacobs and the system advocated by Mr. Ranger.

The Tariff Problem.

Mr. Cyril F. James gave an address showing the effect of the tariff on primary industries. The primary industries, he stated, were fundamental, for without them no secondary industries could exist. Despite the fiscal policy of Australia, the farmers and fruitgrowers were not getting adequate reward for their work, and there was widespread unemployment.

The burden of the tariff, the Navigation Act, etc., finally came down to the man on the land, who could not pass on the increased cost of production. The Sugar Agreement was a staggering burden for Australia. The Paterson plan to stabilise the butter industry was, in the opinion of Professor Giblin, one of the most wasteful forms of protection by subsidy that the Commonwealth Government practised. The urgent necessity was to decrease the cost of production. As the fiscal policy was fundamentally wrong, it was necessary for the primary producers to put their whole weight behind a sane programme for Government in the development of Australia.

A vote of thanks was accorded to Mr. James.

Proposed Fruit and Flower Show.

Mr. J. H. Lang said the executive approved of holding a combined fruit and flower show next autumn. Tasmania, however, had decided on an all-Australian fruit show. This should be supported. The proposed show, if held, should be local this year. The Garden Week Committee had been approached, but their dates (March 31 to April 5) seemed unsuitable for a fruit show.

Mr. Cole (Tyabb) said April would be a good time for a fruit show, for, in addition to the fruit, plenty of flowers were available. It was decided to approach the Royal, or any other Horticultural Society, with a view to holding a State show next autumn.

Election of Office-bearers.—Office-bearers were elected as follows:—President, Cr. W. Mock (East Burwood); Vice-President, Mr. F. J. Byrne (Wan-tirna); Auditor, Mr. J. W. Barrett; Secretary and Treasurer, Mr. J. G. Aird (Ringwood).

Pre-cooling of Apples.

The Secretary reported that insufficient support was forthcoming from the growers towards the proposed shipment of Apples under pre-cooled conditions.

Mr. Kerr (Tyabb) said his district would supply 1,000 cases, and probably double that quantity. They were well behind the idea of the experiment.

The Chairman said they knew pre-cooling was essential for Pears, but experiments were needed to see if pre-cooling was necessary or justified with Apples.

Mr. W. J. Williamson (Portland) and E. H. Hatfield (Tynong) strongly supported the pre-cooling experiment.

It was finally decided to approach the Victorian Fruit Marketing Association on the subject.

Spraying Oils.

Mr. F. Moore (Blackburn) submitted a resolution "that the Minister for Customs be approached in reference to the removing of the Customs duty on Volck oil until such time as an oil of the same quality could be manufactured in Australia, and that the duty be removed from other spraying oils." He believed there was a very big future before Volck for the control of scales and the codlin moth. The Prime Minister had said it was necessary for growers to reduce the cost of production, and here was an opportunity to do so. The duty was 40 to 45 per cent. on Volck oil. Australia had to compete with growers who could put their fruit on the export markets at a lower cost than ours. Crude oil for power was duty free. The manufacture of red oil carried a substantial duty. Fumigation of Lemons and other citrus trees though compulsory, was not yet satisfactory. Many growers believed more in oil sprays. Volck was safe for spraying at any period of the year.

Mr. Stockton (Tyabb) seconded the resolution.

Mr. Aird said that for two years he had been battling with the Customs Department and had got no "forrader." At his suggestion, the resolution was altered to read: "That this Conference support the citrus growers in taking up the matter of duty on spraying oils with the Customs Department."

In this form the resolution was carried.

Voting Powers.

On the motion of Mr. F. Moore, seconded by Mr. John Tully (Doncaster), it was decided to elect a committee to report on the voting powers of delegates. The following were elected a committee:—Messrs. J. J. Tully, H. Willoughby, F. Moore, to-

gether with the Chairman and Secretary.

Mr. T. R. Ashworth gave information concerning the Employers' Federation Insurance Co., and was thanked.

An address on white oil and arsenate of lead by Mr. W. H. Murray was listed. Mr. Murray apologised for non-attendance, being in another part of the State.

Petrol Tax.

On the motion of Mr. A. F. Fankhauser, seconded by Mr. J. H. Lang, the following resolution was carried unanimously without discussion: "That this Conference favors a tax on petrol in lieu of the present method of motor taxation, and that the registration of this be reduced to a minimum."

Mixing Arsenate of Lead with Oil.

Mr. J. M. Watt (Hastings) asked for growers' experiences regarding the mixing of arsenate of lead with white oil. Mr. Lang said that the subject of mixing white oil with arsenate of lead needed careful consideration. Some white oils had the property of precipitating the arsenate of lead, with others the lead arsenate remained in suspension. Experiments could be conducted by mixing these products in a glass bottle and noting the action. He had got best results from spraying for codlin moth by mixing one gallon of Glensel with 100 gallons of lead arsenate solution. Six applications had been given throughout the season.

Mr. E. H. Hatfield said that mixing of oils with lead arsenate had a detrimental effect on the skin of the fruit at certain periods of growth. There was a danger, too, of the arsenic residue being above the gazetted maximum.

Importation of Western Australian Apples.

Mr. White (Somerville) said that last year during the heavy Victorian crops of Apples and the shortage in Western Australia, no Victorian fruit was permitted entry into the Western State. He had since learned, however, that that State was free of the codlin moth, and to that extent supported the Western Australian action, as the codlin moth was worse than all the other pests combined. Had Western Australia any diseases which Victoria had not got?

Mr. J. M. Ward, Superintendent of Horticulture, said that Western Australia was free of the codlin moth. Apples and Pears from codlin moth infected States were not permitted entry into W.A. That State, however, had the fruit fly.

A Voice: "Has Victoria the fruit fly?"

Mr. Ward: "We have not the fruit fly in Victoria." All incoming fruit

was carefully inspected. Victoria had imported to date 84,000 cases from Western Australia and 174,000 from Tasmania. Oranges from New South Wales and Queensland were very rigidly examined for fruit fly. There was no fruit fly in the principal Apple-growing districts of Western Australia, but the pest had been discovered in their Oranges. W.A. was not now sending Oranges to Victoria. Western Australia was in the happy position, also, of having no black spot.

Mr. White stated he was satisfied with the explanation given.

The German Tariff.

Mr. P. V. Kerr moved that the Federal Government be requested to make more favorable tariff arrangements in respect to Australian Apples and Pears with the German Government. New Zealand and U.S.A. Apples paid at a rate of 1/4 per bushel duty. On Australian Apples the duty was 2/7 per bushel. Australian growers might not be aware of this, as it was not shown on account sales. The fruit was landed in bond and purchasers had to pay the duty before taking the goods.

In seconding, Mr. J. H. Lang asked that this matter be referred to any Australian Conference of Fruitgrowers to be called in the near future, and with this addition the resolution was carried.

Sugar Embargo.

Mr. W. Hutchinson (Somerville) moved that this Conference support the Town and Country Union in its efforts to have the sugar embargo removed. He said this was one of the serious items affecting the fruit industry. Sugar for jam-making in Australia cost £30/6/8 per ton. The specimen of Java white sugar (which was shown to delegates) was quite suitable for fruit processing and, in fact, suitable for sale by grocers, although this had been termed "raw" or "unrefined" sugar. The sample submitted was offered at 10 guineas per ton C.I.F. Melbourne. The resolution was carried unanimously.

Arbitration Court.

Mr. J. H. Lang proposed that: "This Conference congratulate the Federal Government on its decision to abolish the Federal Arbitration Court." The resolution was seconded from all parts of the room, and carried with enthusiasm.

A suggestion was made that the Executive arrange that at future Conferences the business items be taken before the reading of papers.

There were several matters of cool store practice then discussed, for which a hearty vote of thanks was carried to the Chairman, who suitably responded, and the Conference closed.

Cool Storage Research Work.

Pre-Storage Factors and Life History of Fruit in Store.

A Paper Read by G. B. Tindale, B.Sc., Department of Agriculture, Melbourne, before the Cool Stores' Conference.

THE OBJECT OF COOL STORAGE as applied to fruit, is to retard the life processes which continue after the fruit is picked, and so by lengthening the life of the fruit, extend its marketing period.

Research work in fruit cool storage may be divided into two parts, the first dealing with the way in which pre-storage factors affect the subsequent behaviour of the stored fruit, the second dealing with the actual life processes of the stored fruit and how these are affected by the cold storage conditions of temperature, humidity, and atmospheric composition.

Pre-storage factors affecting the subsequent keeping quality are numerous, and although one may make general observations of great value, yet it is only by means of carefully controlled experiments conducted over several seasons, that one is able to definitely prove a point.

Effects of Climate.

Take for instance the important factor—climate. We have made the general observation over several seasons, that William Pears grown in the warm Goulburn Valley, keep much better than the same variety of Pear grown in the cooler southern districts.

J. S. Calwell has conducted in the United States of America an elaborate test with Apples to test the affect of climate on the keeping quality and he has found that in years of most sunshine the greatest quantity of sugar is stored in the fruit and the fruit keeps longest.

Cultural methods

such as cultivation, manuring, irrigation, pruning, all have a decided influence on the size and texture of the Apple. Over-sized soft-textured fruits do not store well, and cultural operations should be directed towards producing firm fleshed, medium-sized fruits. According to Dr. Barker, of Cambridge, who has examined several shipments of Australian fruit on arrival in England, there is markedly greater wastage among the large sized Apples, and he raises the question whether it would not be advisable to restrict the export of the large sizes.

Irrigation and Rainfall.

So far as irrigation is concerned, we have evidence that late watering causes Apples to break down rapidly in cool store. Jonathans from Ring-

wood were being picked at weekly intervals. Owing to the dry weather, the first two pickings resulted in very small Apples. Between the second and third pickings there were bounteous autumn rains. The Apples began to swell rapidly, the fourth and fifth pickings being of very large sizes. It was found that the pickings after the rain, especially the fourth and fifth suffered from breakdown, while the pickings made before the rain kept excellently.

Maturity at Picking.

One of the most important pre-storage factors which influence the subsequent storage life is the stage of maturity at picking time.

Undoubtedly there is a correct stage to pick fruit for storage. Apples picked too green shrivel, and, besides, lack size and quality. Apples left on the tree too long become soft and subsequently suffer from breakdown in store. Apples should therefore be picked at an intermediate stage of maturity.

As fruits vary from year to year in their time of ripening, it is not possible to specify the best date for picking. The color of the unblushed side of the Apple forms a reliable guide. As the Apple ripens, the color of this side of the fruit changes from a green, through a green-yellow to a yellow. The fruit should be picked when the unblushed side is green-yellow.

R. C. Palmer, of the Summerland Experimental Station, British Columbia, Canada, has carried out tests extending over several seasons with Jonathans, picking them at three stages of maturity, i.e.: when the unblushed side is (a) green, (b) green-yellow, and (c) yellow. His experiments have definitely proved that where the Jonathans were left on the trees too long, i.e., when the unblushed side had turned yellow, the percentage of breakdown was very high. By picking the Apples at the intermediate stage of maturity, the Apples were of good quality, average size, and suffered little from subsequent breakdown. In order that orchardists may readily recognise the correct stage of maturity for picking Jonathans, R. C. Palmer has devised a very simple color chart. On it are pasted the three colors, each color being perforated by a large hole. By placing the unblushed side of the Apple against the hole, the color can then be quickly matched.

Local observation is in exact agreement with R. C. Palmer's results, and orchardists are advised to give this matter of maturity at picking time much consideration.

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Research With Stored Fruit.

I SHALL NOW PASS ON to research work directed towards studying the life processes which continue after the fruit is picked, and how the storage conditions of temperature, humidity and composition of the atmosphere affect these processes.

When the fruit is stored, it continues to take in oxygen and give off approximately equal quantities of carbon dioxide. At the same time the sugars and acids which were formed while the fruit was growing, are gradually used up, heat being evolved in the process.

By measuring the rate of production of carbon dioxide, one obtains a measure of the rate of living of the fruit. This line of research has been carried out by the Low Temperature Research Station, Cambridge, with results of great practical and scientific value. It was found that with the Apple,

the respiratory activity

steadily increased after being placed in store. In one case, with Apples stored at 54 degrees F. there was a steady increase in respiratory activity for 25 days, after which the activity gradually diminished. At the point of greatest activity—called the climacteric—it was found that flavor and aroma were developed to a maximum. After the climacteric is reached, i.e., when the activity slows down, the Apple is definitely on the down grade, and quality suffers. The Apple becomes mealy while the flavor and aroma are poor. Just before the death of the Apple the respiratory activity slightly increases, then the production of carbon dioxide ceases, the Apple then ceases to live. It is found that even though the Apple be dead there still remains some sugars and acids.

Varieties' Keeping Qualities.

In order that we may market fruit of good quality, one should not leave the fruit in the store after the climacteric has been passed. As various varieties of Apples vary in their respiratory rates, they therefore vary in the time taken to reach the climacteric, or in other words, some

varieties are better keepers than others. By recording the time taken to reach the climacteric it enables one to forecast the approximate cool storage life of different varieties of fruit. By cool storage life, one means the maximum period in store without impairing quality either in store or during the marketing period. The forecasts made by the Cambridge people for the cool storage life of English Apples would probably not apply to our varieties, but the Oregon State Agricultural College, U.S.A., has worked out under their conditions of climate, etc., the storage life of several varieties of Pears which are widely grown here. Their results are:—

	Days.
Bartlett (William)	30 to 40
Howell	90 " 120
Bosc	90 " 120
Comice	100 " 110
d'Anjou	150 " 180
Winter Nelis	180 " 210

Having thus seen how the activity of the fruit (taking the Apple as an example) can be determined, by measuring the carbon dioxide evolved, one then can, by similar means, study the effect of temperature, humidity, and atmospheric composition on the Apple in cool store.

So far the

effects of temperature

have received most attention from investigators. By lowering the temperature the life processes are slowed up and so the storage life increased. In general, the aim has been to store at a temperature a little above the freezing point, but recent work at Cambridge has shown that most fruits are definitely harmed by the application of such low temperatures. Apples have been stored at accurately controlled temperatures from the freezing point upwards, and it has been found that some varieties suffer from internal breakdown or premature death if stored below 40 degrees F. This did not apply to all varieties of Apples, but susceptible varieties such as Bramley and Lane's Prince Albert kept far longer at temperatures about 40 degrees F.

Further experiments have shown that certain varieties of Pears, Plums, Peaches, Oranges, Tomatoes, etc., are all susceptible to low temperature breakdown, indeed, according to experiments by Dr. Barker, of Cambridge, Tomatoes are injured if stored below 50 degrees F. It should be particularly noted that the breakdown frequently does not manifest itself until the fruit

is removed from store

and in this connection it is worth mentioning that according to reports

received by Dr. Barker, breakdown is particularly noticeable in some varieties of Australian Apples, particularly Cox's Orange Pippin, Ribston Pippin and Jonathan, after their removal from ship.

This matter of temperature, as affecting cool storage life is obviously a matter of prime importance, for it may so happen that we have been adopting

too low a storage temperature

any many of our storage diseases, affecting Apples, Pears, Peaches, etc., may be brought about through this cause.

Humidity.

Very little research work has been carried out with humidity. Too low a humidity causes wilting of the fruit. But it is not known if excessive humidity has any harmful effects, although, according to experiments carried out by N. McClelland and L. W. Tiller, in New Zealand, it was observed that breakdown of Apples was associated with excessive humidity. It would appear that, with fruits such as Oranges, Grapes, Plums, and Peaches, which are so readily attacked by various moulds the humidity of the storage chamber would play a part in the germination and development of such moulds, and hence the keeping qualities of the fruit.

Lastly there is the effect of the composition of the atmosphere

on the storage life. This is quite a new development in cold storage research, and it has been developed with striking success by the Low Temperature Research Station, Cambridge. In a normal atmosphere, oxygen is present to the extent of 21 per cent., and carbon dioxide to the extent of 0.04 per cent. In an unventilated chamber, the carbon dioxide produced by the fruit accumulates, and at the same time the oxygen supply is diminished by a corresponding amount.

When the atmosphere contains carbon dioxide to the extent of 10 to 15 per cent., and oxygen to the extent of 10 to 5 per cent. (the sum of the carbon dioxide and oxygen remaining constant at about 21 per cent.), the ripening of Apples is very appreciably retarded, and in some instances the cool storage life is prolonged by 100 per cent.

According to the Cambridge experiments, it was found that the change in color from green to yellow in the course of ripening, was greatly retarded, that the softening of the flesh tissues proceeded more slowly under gas storage, and that gas-stored

Apples remained sour to the taste for a considerably longer period than those kept in air. Lastly, it was found that the retarding effect of

reducing the oxygen

and increasing the carbon dioxide in the storage atmosphere progressively increased to a point beyond which injurious effects such as brown heart became noticeable. Thus, where the percentage of carbon dioxide exceeded 15 per cent., the disease, brown heart, manifested itself.

For best results with gas storage, the fruit should be stored at a temperature just above the lower limit at which susceptibility to low temperature breakdown commences.

New Research Work.

I shall now conclude by referring to the research work which our Department is about to commence. The first matter to receive our attention will be to investigate the effect of low temperatures on our varieties of various fruits, and to determine in particular, if various cold storage diseases may not really be in some form of low-temperature breakdown. For this purpose we have had constructed twelve experimental chambers, the temperature of which will be automatically controlled to any degree of heat. Owing to the importance of humidity, especially for the storage of fruits liable to mould attack, the chambers have been designed, also that the degree of humidity may be automatically controlled to within very exact limits.

Finally in view of the importance of the gas storage experiment, the chambers have been constructed so that they may be adapted to carrying out work along these lines.

It is hoped that with this apparatus it will be possible to gradually accumulate information which will be of a fundamental nature, besides being of practical value.

Discussion.

Mr. P. Val Kerr (Tyabb) said that certain Apples, notably "Statesman," stored best if picked green and kept for a month to six weeks before placing in cold store.

Mr. Tindale said that this matter warranted further investigation. Several varieties developed the waxiness of the skin after picking, which assisted storage.

Mr. E. H. Hatfield (Tynong) said that freshly picked Apples, if stored at once, showed stalk marks, whereas if kept for a few days the skin toughened, there were no stalk marks, and the fruit kept better.

Mr. Lang said that oiled wrappers largely prevented scald of Apples. The Granny Smith variety developed wax after picking. The Batlow Association had written to him, asking if delayed storage was best for Granny Smith, a variety largely grown in that locality. He had replied, urging delayed storage, and good results had followed, though Granny Smith stored immediately after picking failed in cold store. He believed delayed stor-

age to be absolutely essential for many varieties, particularly the green ones. He suggested that research work be conducted to determine the optimum of delayed storage.

In replying to a question by Mr. Fankhauser re storing Pears, Mr. Tindale replied that Pears were frequently stored at 32 degrees, or slightly lower. Experiments in Oregon showed a maximum storage period for Williams as 30 to 40 days.

By storing at 40 degrees the fruit kept better after coming out of cold store than when stored at lower temperatures. Some varieties went black when stored at the higher temperature mentioned. Growers should market the fruit before the life storage period had expired.

Experiments to discover the amount of carbon dioxide given off at various temperatures would be profitable lines of research. Similar experiments with Plums would yield good results.

The Science of Fruit Storage.

Temperature, Humidity ∴ Careful Handling is Vital.

Lecture before Cool Stores' Conference by Dr. W. J. Young, Associate Professor of Biochemistry, University of Melbourne.

THE IMPORTANCE of an exact knowledge of the changes which fruit undergoes in ripening and in subsequent storage is now generally recognised by all concerned in its growing and marketing.

Since the war an increasing amount of research has been carried out into this subject, and it has already yielded results of great value and promise.

Especially noteworthy is the work on the Apple, which is being conducted for the Food Investigations Board of Great Britain at the Low Temperature Research Station in Cambridge, and at the Imperial College of Science, London, and I propose in this address to give a brief account of some of the recent results of this work.

Botanically fruit may be defined as a development of part of the flower which takes place after fertilisation. It consists of a collection of living cells, with air channels running through the mass and communicating with the outside, and it is by these spaces that the living cells breathe.

Constituents of the Cells.

We may consider the cells as consisting of three types of matter:—

(1) The walls or structural parts, largely composed of cellulose and pectin substances.

(2) The living protoplasm represented by the protein; and

(3) The stored material upon which the protoplasm lives, mainly starch, sugars, and acids.

The life history of the Apple may be divided into two periods—(a) that of growth, and (b) that of senescence or old age.

The Period of Growth.

During this time the fruit passes a dependent existence on the tree, drawing on the sap of the tree for the materials with which it builds up its

substance. The cells divide and multiply, and the fruit increases in size, and stores up material upon which it will subsequently have to live.

The protein which is a measure of the active living protoplasm, increases in quantity, reaches a maximum in the very early stages of growth, then diminishes slowly.

Of the stored material, the acid content attains a maximum also at an early stage, and then gradually diminishes during further growth.

The starch comes later, and a maximum is reached about the middle of the period. It is then gradually transformed into sugar, and when maturity is attained very little starch is left. The sugars increase throughout the period, and are at a maximum at maturity. Thus during this period of growth, those processes by which more complex substances are built up from simpler substances predominate over those by which complex are broken down to simpler.

The period of old age or

Senescence

commences after the fruit has ripened, usually after it has been gathered, and it is the period when Apples are transported, stored or marketed. During this period the protein (living protoplasm) hardly alters at all until just before the Apple dies, when it diminishes somewhat.

The stored materials, sugars and acids, gradually diminish, being used up by the living protoplasm to produce energy. The structural parts, the cellulose and pectins, gradually disintegrate, being broken down into soluble substances, hence the fruit gradually softens during keeping.

Senescence generally ends by disease such as fungal rots. Spores of moulds and bacteria always occur on the skins of all fruits, and the changes which the fruit undergoes through

age, lessens its resistance to attack by these moulds.

Fruits may die prematurely through damage to the skin, which assists invasion by moulds; through adverse conditions of storage, such as frost injuries, unfavorable atmosphere, etc. This period of senescence is thus a down-grade period, when the complex bodies built up in the previous stage are gradually broken down again into simpler substances.

As the ultimate object of all such research is to lengthen this period, the following questions arise:—

How is the period of senescence, i.e., the storage life, affected by the conditions during growth?

Can it be lengthened by modifying the conditions of growth? and

What are the factors affecting senescence and the best conditions of storage which will give the maximum storage life?

Conditions of Growth and Storage Life.

Unless death takes place prematurely, the length of life of the Apple depends upon the amount of material stored up in it, and upon the rate at which this is used up by the living matter of the cells.

An Apple takes in oxygen and, as the result of the oxidation of its stored material, mainly sugar and acids, carbon dioxide is produced. The rate at which this carbon dioxide is evolved is called the respiratory rate.

Experiments have shown that during growth this rate, high at first, gradually declines to a constant rate when maturity is reached. It remains constant for a short time even after gathering, then rises suddenly to a high level, and again gradually diminishes throughout storage, a second slight rise taking place immediately before the Apple dies. The

sudden rise after gathering is not at present understood, but appears to be associated with the change in life from the dependent to the independent existence.

When the respiratory rate is compared with the chemical composition, it is found that a high rate is associated with a high protein content, i.e., it depends on the amount of living matter present, it can thus be used as a measure of the vital activity of the fruit.

It has also been found that Apples in which the ratio of carbohydrate to protein is high, i.e., which have a large quantity of storage matter compared with living protoplasts, have a long storage life, and vice versa. The chemical composition thus gives some indication of the storage life of the fruit.

Further, experiments have shown that Apples of the same variety, but grown on different soils, differ in the relative quantities of storage material and living protoplasm, and show corresponding differences in their storage life.

Thus the storage life or period of senescence depends on the conditions of growth and upon the soil conditions, and these experiments thus open up the possibility of lengthening storage life by altering the soil conditions as by suitable fertilisers.

Factors Affecting Senescence or Storage Life.

(1) **Physical Damage.**—The necessity for careful handling of fruit in all the processes through which it passes from orchard to consumer, should be so apparent to everyone that it should not require mentioning. Unfortunately, however, the largest share in the wastage of fruit at the present time may be traced directly, or indirectly, to rough handling. Damage to the skin during picking, packing, and transport causes juices to ooze out, and these provide an excellent medium for the development of fungal rots. It is scarcely too much to say that almost all fungal attack commences on abrasions on the skin of the fruit.

It is therefore impossible to over-stress the necessity for treating all fruit as it really is, a very fragile commodity, and to handle it with such care that it enters into its period of senescence in the best condition possible, and not partially maimed, and open to the attack of disease.

(2) **Effects of Temperature.**—Measurements of the respiratory rate show that, within the limits compatible with life, the vital activity of fruit increases at an accelerated rate with

rise of temperature. Thus, whereas a rise of temperature from 35 to 40 deg. Fahr. causes a small increase in rate, a rise from 60 to 65 deg. causes a relatively large increase and a correspondingly large rate of consumption of stored material.

Too low a temperature may cause damage, as in the so-called "scalds," in which some of the cells have been killed by extreme cold. The ideal for cold storage of fruit is to maintain a temperature low enough to reduce the rate of living as much as possible without causing any damage to the living matter. This temperature varies with different fruits, and even with different varieties of the same fruit. It has been found, also, that fruit may be more susceptible to other conditions, such as atmosphere, at certain temperatures than at others, so that it is only by careful observation and trial that the optimum temperature for storage can be ascertained for each variety of fruit.

The act of respiration of fruit produces heat in proportion to the carbon dioxide formed, so that at a high temperature the amount of heat generated is very considerable. This has an important bearing on overseas transport. Fruit loaded hot into a large ship's hold may go on generating heat at such a rate that it may be several weeks before the ship's refrigeration apparatus is able to reduce the temperature in the centre of the stack to that at which it is intended to be carried. Great variations in temperature may thus result, and the fruit, on arrival at its destination may be in a very mixed condition of ripeness. For this reason, all fruit for transport overseas should be cooled down before loading into ships. One ton of Apples at 40 deg. F. gives approximately 56 B.T.U.'s. of heat per hour, and at 70 deg. F. 248 B.T.U.'s. per hour. Thus a cargo of 30,000 cases, or approximately 600 tons, at 70 deg. F. will generate heat to the extent of 2,764,800 B.T.U.'s. every twenty-four hours more than it would if reduced to 40 deg. F.

B.T.U. Means British Thermal Units.

(3) **Effects of Atmosphere (Carbon dioxide, Humidity).**—The presence of carbon dioxide in low concentrations has been shown to slow down the rate of respiration of Apples, and thus to prolong their life, and Apples have been stored in a suitable atmosphere almost as long as in cool storage. At present, however, this "gas storage" is not a practical question on account of the danger of the concentration of the gas rising. When the carbon dioxide rises above 10 or 15 per cent., the condition known as "brown heart"

may arise. In this condition, as the name implies, the interior of the Apple becomes brown, due to the cells dying from the centre outwards. A few years ago, large wastage was caused by brown heart in Australian Apples during shipment to Great Britain. This was traced to want of ventilation in the ships' holds, and the consequent accumulation of carbon dioxide given off by the fruit. In some holds a concentration of as much as 30 per cent. was found. This shows the necessity for proper ventilation in storage. It also provides another strong argument for pre-cooling fruit so that it should be loaded into the ship in a condition in which it is giving off only small quantities of carbon dioxide.

The difference between the carbon dioxide produced by a cargo of 30,000 cases of Apples at 40 deg. and 70 deg. F. is about 6,000 cubic feet in twenty-four hours, or approximately 10 per cent. of the volume of the fruit itself.

Discussion.

Mr. W. A. Webb asked was it detrimental to store citrus with Apples and Pears in the same chambers or in chambers with the same air circulating over these fruits?

Dr. Young replied that the only objection for storing citrus with other commodities was that citrus gave off certain gases which might affect the others in flavor. Storing butter near citrus fruits made the butter uneatable, but he did not think Apples or Pears would take up the citrus flavor.

A Delegate: "Is the air in land cool stores usually changed sufficiently, or would better results be obtained if more fresh air were introduced?"

Dr. Young: "As a rule, in a land cool store there is considerable ventilation. Air is introduced with the opening of the doors. The stacks are so spaced as to provide ventilation, which is altogether different from the system of stacking fruit in ships' holds." He thought that in land cool stores the present methods provided sufficient fresh air.

OH, THESE FARMERS!

Sunday-school Teacher (reading of the deluge): "And then it rained for 40 days and 40 nights."

Bright Pupil: "And were the farmers satisfied then, teacher?"

Fruitgrowers' Cool Stores Association of Victoria.

Proposed Extension of Activities.

THE EXTENSION of the activities of the Fruitgrowers' Cool Stores' Association of Victoria was considered by a sub-committee, and the following report was presented:—

The basis of any organised effort by the industry must be a standard pack for every line of fruit marketed, backed by the guarantee of the controlling affiliated body.

The following phases of marketing were considered:—

(1) Local and Up-Country.—

(a) Local: Any suggestions regarding this to be considered in consultation with the Metropolitan Association.

(b) Up-Country: The best and easiest start to be made towards increasing consumption would appear to be in our own State.

A certain amount of private and district trade is at present being done, but a greater consumption would accrue as the result of co-ordination (to avoid overlapping) and organisation.

As a first step in this direction it is proposed that a conference of growers and district representatives be convened in September to organise a campaign to supply the upcountry trade for next season.

(2) Interstate.—No suggestion can be made in this respect until the organisation required to deal with the up-country demand has been proved successful.

The same applies to—

(3) Overseas.—In both cases, however, in view of the competition to be met from shipments from the other States, the basis of any organising must be the standard pack.

To enable any branch of the industry to be organised funds must be made available.

Should the members of this Association be unanimously in favor of any organised effort, it is an easy matter to raise a small sum of money by means of a levy, as exemplified by last season's Apple campaign, but this means an organised few carrying the bundle for the unorganised mob.

The only equitable method of providing finance for organisation of the industry is the orchard tax.

In the event of this conference deciding that the activities of this Association be not extended in the direction of marketing, there will still re-

main work on the lines of research and of an academic nature.

Mr. R. E. Boardman has kindly outlined for us the following suggestions:—

1. Initiation of cold storage experiment, in active co-operation with the Council for Scientific and Industrial Research and Department of Agriculture.

2. Representative of Cool Stores' Association to join a sub-committee of the C.S.I.R. in this matter.

3. The securing of bulletins, information and progress reports from the Cambridge Low Temperature Station, and regular correspondence with that organisation.

4. The securing of bulletins from the Bureau of Agricultural Economics, Washington, D.C., giving the results of the experiments of their plant physiologists and cold storage work throughout U.S.A. Regular correspondence with Washington on this subject.

5. Securing the bulletins from the South African Department of Agriculture—with particular reference to cold storage on land and sea. Regular correspondence with that Department.

6. The formation of a research committee from the Cool Stores' Association.

7. Effective contract with the Melbourne University and its Agricultural Section.

8. Reports of Research Committee's findings to be circularised to affiliated Associations and suggestions invited (the "Fruit World" will publish the committee's finding from time to time and provide reprints).

9. That the committees be formed in the Cool Stores' Association as follows:—

(a) Research Committee (as mentioned in par. 6).

(b) Legislative Committee, to watch legislation in progress; to suggest legislation where considered desirable; and to check up grading and other regulations.

(c) Advertising Committee.

(d) Local Service Committee, to deal with current matters arising in connection with cool stores, equipment, railway transport, etc.

(e) Any other committee or committees necessary to serve the Association.

In submitting the report, Mr. J. W. Barrett said that good results would follow from co-ordinated efforts in regard to research, collection of essential statistical information which would result in greater stability in prices.

Several delegates spoke of the necessity for preventing overlapping in supplying truck loads to country districts. For instance, Portland, Quantong and Harcourt conveniently supplied certain areas, and the dumping from other districts caused loss to all concerned.

Co-ordination in supplying interstate markets was also advocated. The ideal suggested was having district brands and sending quotas to specified markets, but this was difficult to arrange because of the individual shareholders in the stores.

Several speakers supported the orchard tax for raising funds for organising. The cool stores were stated to be among the most successful co-operative movements in the State.

Mr. F. Moore, Blackburn, said that the Victoria Market was a curse, as growers competed with each other and reduced prices.

The report was adopted, and it was decided to hold a conference in September, when it was hoped a plan for co-ordinated efforts would be submitted.

Tasmania.—Messrs. Clements & Marshall, Box 86, Devonport, Tasmania, also at Box 27, Post Office, Launceston, have been appointed Northern Tasmanian representatives of the firms of British fruit brokers, which are represented in Australia by Mr. H. G. Colombie, of Temple Court, Collins-street, Melbourne.

Mr. H. Sharman, of the firm of Clements & Marshall, reports that from present indications there should be a record crop of Apples in the Mersey Valley in the coming season.

Beauty Point, the deep water port on the Tamar River, was developing as a centre for despatching Northern Tasmanian fruit for overseas export markets.

Mr. Jumptup: "To whom are you writing, dear?"

Her husband: "The Inspector of Taxes."

Mrs. J.: "Oh, then, do tell him about that horrid one I travelled to the shops in yesterday."

Marketing the Apple Crop.

Hopeful Outlook for 1930.

IN DEALING WITH the subject of distributing the Apple crop of 1930, it may be advisable first to take a general review of the Apple production and distribution of other countries that vitally effect the sale of our fruit in the oversea markets.

Australia has been fortunate in the past in so much that her full crop of Apples occurred during the year of the lighter crop in U.S.A., so that the two full crops did not come into competition. U.S.A. were sending Apples to Great Britain and the Continent almost throughout the year in 1927, and again this year.

Their lighter crop in 1927 opened the way for the more profitable marketing of our record export in 1928.

With the opening of the Panama Canal, the position of Apple export has materially changed. Prior to that the bulk of the Apples were shipped to Europe from the Eastern States, and were practically off the market when the first Australian Apples arrived in the latter part of March.

Now the Western States send their cool-stored Apples to Europe as late as August, American Apples being on the English market throughout the year.

To show how this trade has grown during recent years (calculated in bushels):—

Year.	Pacific Ports.	Atlantic. Ports.
1920	112,300	2,333,067
1925	2,013,841	2,281,849
1928	3,840,978	3,649,894
Estimate		
1930	5,000,000	—

The expansion of this industry is due in a large measure to the attention paid to it by shipowners and engineers. "Better Fruit" for February states: "After years of experience with various commodities, they have developed systems of refrigeration that practically assure satisfactory output of nearly all of our perishable products to a point where its success is not questioned."

The air circulation system

is the one favored as especially suitable for the carriage of fruit by reason of the absence of coils in the refrigerating chamber, as such coils have a tendency to generate a considerable amount of moisture.

The ships used in this service carry from 20,000 to 200,000 boxes, which are carried at an even temperature of around 34 degrees F. The voyage takes from 30 to 45 days, and the

freight charge is 90 cents (3/9) per box. It is interesting to note that 79 per cent. of the tonnage of these vessels is under the British flag. Cool storage facilities are available at all the Western ports.

The total production of Apples in U.S.A. varied from 246 million bushels in 1926 to 123 million in 1927. As their seasons are the reverse to ours, it is their 1927 crop that would compete with ours of 1928.

The estimate of the crop made on July 1 of each year is not yet to hand, but it is very probable that the crop will be somewhat similar in quantity to that of 1927.

Dealing with the returns of American orchards, "The Canadian Horticulturist" of January gives details of an orchard in New York, the production of a period of 20 years, 1904 to 1923, averaging 118 barrels, or 350 bushels per acre, the trees being 20 years old at the beginning of the period.

The average price obtained was 3.83 dollars (16/-) for barrelled Apples and 80 cents (3/4) for culls, 25 to 30 per cent. of the crop being classed as culls or drops. The net profit for the period being 1.51 dollars (6/3) per barrel, or 120 dollars (£25) per acre. The gross return was about £90 per acre, and the profit £25, which shows a return of 26 per cent. on the capital invested.

Coming now to

Australian conditions and prospects, there is absolutely no need for the fruitgrowers to get panicky and lose their heads regarding the marketing of next year's crop.

No doubt efforts will be made, and have been made, to stampede growers and induce them to dispose of their fruit at a low price.

Present conditions show that there will probably be a remunerative market for all fruit produced provided growers do not enter into undue competition and undersell one another in their efforts to dispose of their fruit.

The fruitgrower is as much entitled to a living wage as any other section of the community. The average production of Apples in Victoria, according to official records, is about one case per tree, or 100 cases per acre. A gross return of at least £60 per acre is necessary for the fruitgrower to pay his way. This means an average production of two and a half bushels per tree selling at 5/- per bushel to

return this amount. This result, or even better, is achieved in a good number of our commercial orchards.

But what of those whose returns are lower than these figures? They are not getting a fair return for their labor, and are living on their capital inasmuch as they are depleting their soil fertility without replacement. This is apparent in many orchards in every fruitgrowing district.

Fruitgrowing

can be made to pay

notwithstanding the recent bad years and the artificial handicaps imposed, but it is only the best methods of growing, pest control, marketing, etc., that this can be done, and the average crop must be raised to at least the figure previously mentioned, namely, two and a half cases per tree. Surely this is not impossible. The elimination of waste and utilising of blemished fruit will no doubt play a large part in orchard management in the future.—J. H. Lang, Harcourt, Vic.

ALL-AUSTRALIAN FRUIT EXHIBITION.

Hobart, May, 1930.

Preparations are actively in progress for the big all-Australian Fruit exhibition to be held at Hobart next May.

A strong executive committee is attending to the arrangements; the chairman is the Hon. L. M. Shoobridge, M.L.C., and the secretary Mr. A. J. Honey, Macquarie-street, Hobart.

At the last meeting of the executive the Secretary reported that 2,000 circulars were being sent to likely donors to the prize fund, and that already there had been an encouraging response.

It is expected that the show will be held in the wool stores of Messrs. A. G. Webster & Co.

Australian Fruitgrowers' Conference.
In conjunction with the show there will be held a session of the Australian Conference of Fruitgrowers.

It is expected that there will be a full attendance of delegates from all of the States. One very important item will be that of Apple and Pear export grading regulations. There are several other matters requiring attention from the Australian viewpoint. Items and suggestions will be welcomed by the Hon. Secretary, Mr. R. E. Boardman, c/o the "Fruit World," Box 1944, G.P.O., Melbourne.

MANURING CITRUS TREES.

A Paper presented at the Conference of River Murray Branches of the Agricultural Bureau, held at Waikerie, June 20, 1929, by N. Fotheringham, Manager of the Berri Experimental Orchard.

WITH the object of determining the value of applications of various forms of commercial fertilisers upon the fruiting properties of the Washington Navel Orange, a series of experiments, details of which are set out below, were laid down in 1920. The main plant foods desired to test were phosphoric acid, potash, and nitrogen. Besides these, but to a lesser extent, combinations of these plant foods were also tried.

The fertiliser used to supply phosphoric acid was ordinary 36 per cent. W.S. superphosphate and also bonedust. Potash is supplied in the form of sulphate of potash, and nitrogen in the form of sulphate of ammonia.

Time of Application.

In all tests quoted, the fertiliser was applied twice annually, half quantities being applied in spring and half quantities in late summer, the exact time of applying being determined by the time that irrigations were received; the Government orchard, with other growers, having to take the water in turn. The fertilisers were applied just before irrigating.

Method of Application.

The method followed in applying the fertilisers is to open out a furrow each side of the trees, approximately 6ft. from the tree. The correct quantity of the fertiliser is then spread by hand along this furrow, after which a furrow is thrown to cover the fertiliser, and the irrigation water then runs down that furrow. This method of application may appear to be somewhat out of date, but it is the only way to do the work accurately.

Check Plots.

In these manuring experiments there are three check plots that remain unmanured from the commencement to the completion of the test.

Duration of Experiments.

All figures that will be quoted in the results have been gathered over a period of eight consecutive years, and are complete to last year's harvesting.

Explanation of Tests.

Superphosphate.—Four tests have been carried out at the following rates per acre:—3 cwts., 6 cwts., 10 cwts., 12 cwts.

Bonedust.—Two tests at the following rates per acre:—605 lbs. and 1,008 lbs.

Potash.—Two tests at the following rates per acre:—2 cwts. and 5 cwts.

Nitrogen.—Two tests of 2 cwts. and 5 cwts. per acre respectively.

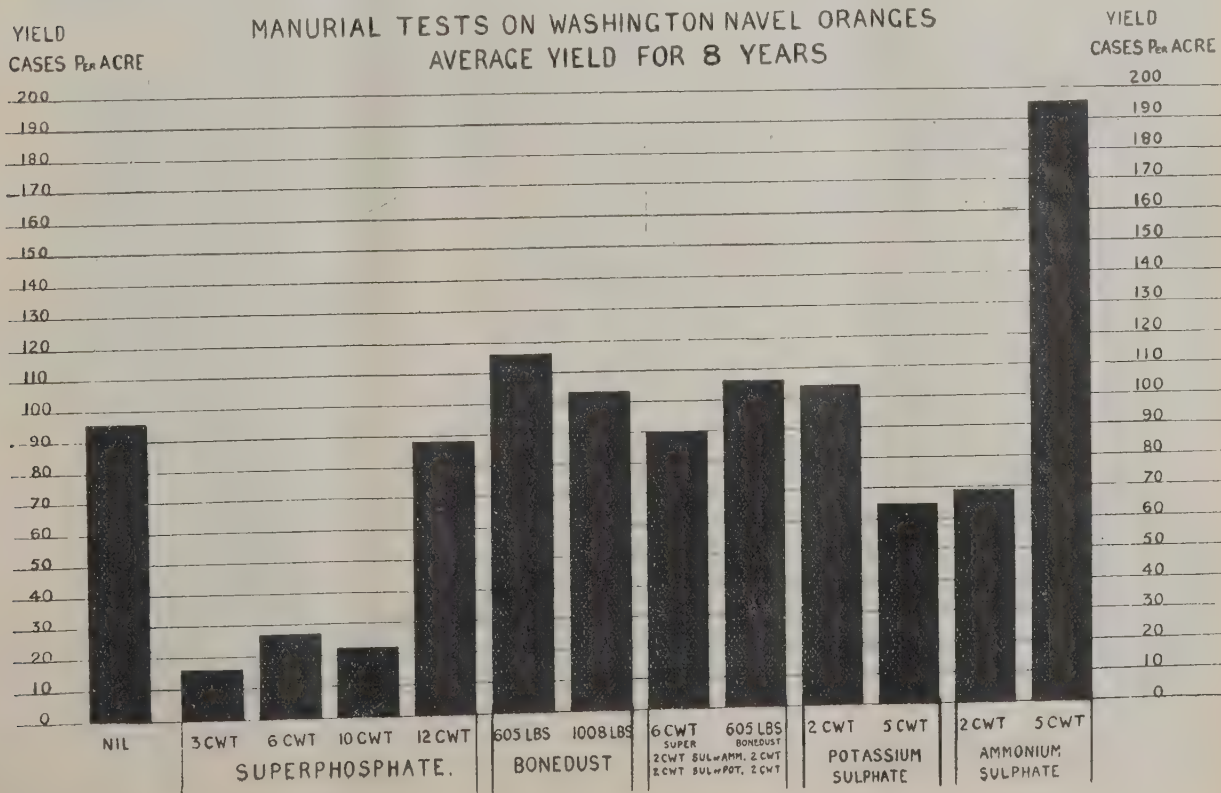
Mixed Manures.—(1) 6 cwts. super. and 2 cwts. each of sulphate of potash and sulphate of ammonia. (2) 605 lbs. bonedust and 2 cwt. each of sulphate of potash and sulphate of ammonia.

From these average results it will be noted that—

(1) In no case does superphosphate exceed the No. 1 fertiliser average.

(2) Bonedust in each case exceeds the check plot to the extent of 20 cases and 7 cases per acre respectively.

(3) Mixed manure, with super. supplying the phosphoric acid, shows 6 cases per acre less than No. 1 fertiliser, whereas mixed manure, with bonedust supplying the phosphatic ingredient, gives an increase of 10 cases per acre.



(4) Sulphate of potash, compared with No. 1 fertiliser, gives an increase of 8 cases to the acre at 2 cwt. per acre, but when applied at 5 cwt. per acre there is a decrease of 31 cases per acre.

(5) Sulphate of ammonia, at the 2 cwt. rate, has a yield of 27 cases below the No. 1 fertiliser check plot, but when applied at the rate of 5 cwt. per acre has given an increase of 98 cases per acre over the No. 1 fertiliser check.

Five hundredweights of sulphate of ammonia has therefore given the best results, and of the manures tried it seems to be the only one to which the trees respond definitely, and then only when given at about 5 cwt. per acre.

The actual monetary returns, after allowing for cost of manure, its application, and also 5/6 per case for Oranges net in sweats, are set out in the accompanying table:—

Manure per Acre.	Cost of Manure Applied. £ s. d.	Value of Crops at 5/6 a case nett. £ s. d.	Loss or Profit over No Manure. £ s. d.	Per acre
No. fertiliser	—	26 8 0	—	—
3 cwt. super.	0 19 1	4 8 0	22 19 1	loss
6 cwt. super.	1 14 2	7 8 6	20 13 8	loss
10 cwt. super.	2 14 5	6 1 0	23 1 5	loss
12 cwt. super.	3 4 4	24 4 0	5 8 4	loss
Bonedust, 605 lbs.	2 19 7	31 18 0	2 10 5	gain
Bonedust, 1,008 lbs.	4 16 8	28 6 6	2 14 2	loss
(1) Complete	5 2 4	24 15 0	3 9 4	loss
(2) Complete	6 7 9	29 3 0	3 12 9	loss
2 cwt. sulp. potash	1 15 7	28 12 0	0 8 5	profit
5 cwt. sulp. potash	4 3 0	17 17 6	12 13 6	loss
2 cwt. sulp. ammonia	2 0 7	18 19 6	9 9 1	loss
5 cwt. sulp. ammonia	4 15 6	53 7 0	22 3 6	gain
(1) 6 cwt. 36 per cent. super., 2 cwt. sulp. of ammonia, 2 cwt. sulp. of potash.				
(2) 605 lbs. bonedust, 2 cwt. sulp. of ammonia, 2 cwt. of sulph. of potash.				

In addition to actual returns, the condition of these trees in the various tests should be considered. Both in the super. and potash tests the trees are yellow in appearance, especially those receiving potash. Those given mixed manure and bonedust generally look healthy. The trees in the 5 cwt. sulphate of ammonia test are the picture of health, whereas the trees receiving potash and super. look very sick and incapable of bearing another crop without dying; the sulphate of ammonia trees look good enough for good average crops.

So convincing are the failures of superphosphate over a period of eight years that a new line of experiments has been laid down. The superphosphate tests have been divided into three portions, each receiving a phosphatic dressing. In addition, one test

receiving sulphate of ammonia, another stable manure, and the third a green crop of Beans or Peas, and dressing of 3 cwt. of sulphate of ammonia per acre. The inclusion of a crop supplying humus is essential, and in another seven or eight years some interesting results should be available. The potash plots likewise have undergone alteration, and have been divided into two plots, both of which are dressed with potash, one test receiving, in addition, also 5 cwt. of sulphate of ammonia, and the other 7½ cwt. of blood manure.—S.A. "Journal of Agriculture."

* * *

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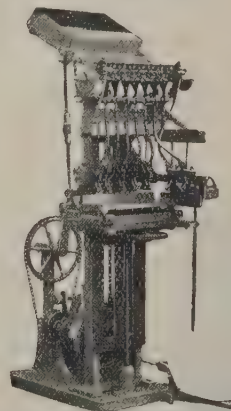
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EXPORT GUARANTEES.

Assistance granted to June 30 under the Export Guarantee Act amounted to £480,003, made up as follows:—

Marston process for the preservation of citrus fruits, £292; citrus fruits industry, £935; Tasmanian hop industry, £24,572; Doradillo Grapes, £15,079; canned fruits, £77,610; broom millet, £2,226; special trade publicity, £108,686; Ohanez Grapes, £2,025; herd-testing, £24,979; payments to recoup the dried fruits advances account, £218,775; Toronto Exhibition, £2,406; visit of Mr. Ranger to the United States, £500; retention of services of Sir James Cooper in London, £1,916.

Severe Frosts.

Damage to Citrus Crops - Frost Fighting Discussed

Severe frosts were experienced during July and August throughout Victoria, and much damage was done to citrus fruits. Writing under date August 16, the Victorian Central Citrus Association states that the frost substantially reduced the quantity of Navels from some districts. In others they materially affected the eating qualities of the fruit. Continuing, the report states:—

Frost Effects.—The recent frosts have substantially reduced the quantity of Navels expected to arrive on the market from some Districts.

"The sale of frost-affected Navels is presenting obvious difficulties on the market. The discrepancies in prices, which occur under normal conditions, are multiplied with this class of fruit, as some consignments sell at their proper market value, and some sell on the basis of sound, un-

affected fruit. Growers, in checking up returns, are asked to make the necessary allowances when they have such discrepancies brought under their notice."

There was fairly extensive damage in the Rochester area.

At Mildura the effects were variable, and in some groves a lot of fruit has fallen. Growers who used smudge pots and other methods of orchard heating were successful in preventing much damage.

The subject of orchard heating is one which is continually cropping up in various parts of Australia and New Zealand, but the fuel for burning is always the problem. American growers have the great advantage of their cheap crude oil fuel, which they get for about 2d. per gallon.

The Pacific Rural Press gives particulars of growers' efforts in fighting frosts, and states:—"On the west side of Stanislaus county, where much damage was done to unprotected orchards, 85 lard-pail heaters per acre saved crops against a minimum of 23 degrees. The Medford, Oregon, Pear-growing district accepts heating as regular routine, and this season again has a crop of fruit. One grower at Linden, with 50 acres of short-stack type of heaters, and equipment cost of £10 per acre, and a complete operating expense of £7/10/- per acre, saved a walnut crop worth £100 per acre. Another grower saved 1,200 to 1,500 tons of Peaches on 100 acres by the use of lard-pail heaters at an equipment cost of £7/10/-, and a complete 1929 operating cost of £4 per acre. The former grower heated nine nights, and the latter five."

The State Electricity Commissioner in Victoria is reported to be preparing a scheme for testing the utility



Illustration by courtesy Los Angeles Chamber of Commerce
GRADING ORANGES IN A SOUTHERN CALIFORNIAN CITRUS PACKING HOUSE.

of brown coal for orchard heating. The subject is one that warrants full investigation. Growers who have had practical experience in frost fighting are invited to send particulars to the Editor, "Fruit World," for the benefit of fellow growers.

Citrus "Dieback"

FOR CITRUS TREES affected with exanthema or "dieback," an application of bluestone (copper sulphate) to the soil in the late winter or early spring is recommended by the N.S.W. Department of Agriculture.

Exanthema is a serious disease, and may cause damage ranging from slight injury to the trees to very severe stunting and bunching of the tree, and an entire loss of crop. Exanthema is believed to be a disturbance resulting from malnutrition. It is generally trees grown on certain types of sandy soils that are attacked with this disease. The disease is favored by lack of drainage and the presence of hardpan.

The five most easily recognised symptoms are stained terminal twigs, stained fruits, bark excrescences, gum pockets, and multiple buds, though not all of these primary symptoms may necessarily be present.

Spraying and Soil Treatment.

The control methods fall into two classes—(a) chemical treatments, and (b) cultural practices, which should, where possible, be employed in conjunction with one another. Chemical treatments consist of (1) the use of Bordeaux mixture spray and (2) the application, as beforementioned, of bluestone to the soil. Either of these methods has given excellent results both in departmental experiments and in private orchards. Bluestone has the advantage of being more easily applied. The Bordeaux spray should, however, always be used in cases where scab or melanose are also present in the trees, because it is an effective spray for all three diseases, when applications are made at the time of blossoming.

Bordeaux mixture of 6-4-100 strength is recommended, and the addition of spraying oil (1 gallon for every 100 gallons of spray) to the Bordeaux seems desirable. Either the red oils or the more recently introduced white oils may be used.

It is recommended that the spray be applied preferably at the full-blossom stage in October in view of the excellent results which have been obtained by spraying at that period, but it is probable that results will

be obtained from spraying almost at any time of the year.

Injury is liable to occur if the trees are fumigated within six months of spraying with Bordeaux mixture, but no damage is likely to take place where the spray is applied after fumigation. An oil spray may be used before or after Bordeaux with safety.

In the case of the bluestone soil treatment it is suggested that an application of 1 to 2 lb. of bluestone (copper sulphate) per tree for trees up to 6 or 8 years old should be made in late winter or early spring. Older trees may be given up to 4 lb. per tree, and a second application may be given in November or December. Subsequent experience may indicate that even smaller quantities than those recommended will prove effective.

Drainage and Soil Organic Content.

Poor drainage is often an important contributing cause of exanthema. Where drainage is bad it should be remedied by under-draining, or where hardpan occurs, by breaking up the hardpan. Trees should not be planted in hardpan country.

To increase the organic matter in the soil, such materials as stable, sheep or fowl manure and abattoir waste have proved beneficial.

The use of loam or sandy loam soil for resoiling has also proved effective. In some cases results have been obtained from the incorporation of large quantities of old leaves and bush scrapings in the soil. The addition of a bulky (preferably leguminous) cover crop to the soil each year would improve the soil condition, and may have some effect in controlling or preventing the appearance of the disease.

CITRUS IMPORTATIONS.

Total Prohibition Requested by N.S.W.

THE Fruitgrowers' Federation of N.S.W., in a recent statement regarding foreign citrus fruits, writes:—

The total prohibition of the importation of citrus fruits can be justified (1) from the danger of the introduction of pests and diseases; (2) the protection of the local industry against unfair competition through the importation of the surplus product from U.S.A.

Australia now produces sufficient citrus for local requirements: when fruit is harvested from recent plantings, export will be necessary.

In certain parts of the U.S.A. there

is an infestation of "Mediterranean fruit fly."

The Interstate Conference of Ministers for Agriculture recently urged the prohibition of citrus fruits from U.S.A., owing to the presence of "yellow scale," "citrus thrips," "citrus white fly," "Fuller's rose beetle," "chaff scale," and "citrus canker," none of which are established in Australia. No action has yet been taken by the Federal Government.

It is claimed that practically every disease and insect pest existent in Australia has been imported, and the Government is responsible to see that no further diseases are introduced.

Information to hand states that owing to a large surplus of the smaller-sized Oranges in California, there is a possibility of Californian Oranges being landed in Sydney at a price which will seriously interfere with the profitable marketing of the local crop. Growers are looking to the Federal Government for protection against such competition by an immediate increase in the import duty to about 6d. per lb., or else the total prohibition of imports.

CITRUS CULTURE.

Manuring—Pruning—Cultivation.

It is recommended by experts to use fertilisers which have a high nitrogen content for fertilising citrus trees. If the fertilisers used do not contain sufficient nitrogen, additional sulphate of ammonia or nitrate of soda should be applied in quantities from 3 to 10 lb. per tree, for trees from five to twenty years old, and in bearing.

Very little pruning is recommended for young citrus trees. When the trees are in full bearing they only require the dead wood removed, and very low hanging branches shortened to upright growths. To stop insects climbing into the tree where "Dicky Rice" are prevalent, limbs which are low-hanging should be pruned to a height of at least 9 inches from the ground. To help prevent disfigurement by these insects a sticky preparation should be applied to the tree trunks.

The tops of trees damaged by frost may be cut back when the frosts are over. All excessive growth which is made on the inside of the trees should be removed. A look-out should be kept for borer infection, cutting the smaller infected twigs out, and injecting benzine into the burrow and blocking the outlet with soap or putty, when the larger limbs or the trunk are infected.

Cultivation should be done as deep as possible between the rows, and at least 6in. right under the trees.

Electrical Power for Cool Stores.

Comparative running costs compiled by J. G. Aird, Secretary, Fruitgrowers' Cool Stores' Association of Victoria.

	Somerville.	Wantirna.	Mt. Waverley	Croydon.	Moorooduc.
Capacity (cases)	19,600	39,200	29,000	21,000	14,000
Motors—Number	2	2	2	3	2
H.P.	35	52	37½	41	20½
Make	A.S.E.A.	Swedish Gen- eral	Parkinson	Parkinson	A.S.E.A.
Tariff—Per unit	1½d.	1d.	1d.	1d.	1½d.
Service Charge—Power	7/-	5/6d.	6/-	5/-	6/-
Light	5/- per 1,000 sq. ft.	5/- per 1,000 sq. ft.	10d. per unit	7d. per unit	5/- per 1,000 sq. ft.
Starting Date	1/2/28	28/1/28	11/2/28	25/1/28	4/2/27
Closing Date	8/12/28	15/12/28	31/12/28	15/12/28	1/12/27
Total Hours Run	2,016	2,545	2,977	2,258	1,154
Power—Units used	40,684	78,975	71,013	56,753	17,310
Energy Charge	£211 18 0	£302 4 6	£282 17 1	£230 2 1	£90 3 0
Service Charge	147 0 0	171 12 0	121 8 0	108 14 4	75 12 0
Total Cost, Power	£358 18 0	£473 16 6	£404 5 1	£338 16 5	£165 15 0
Light—Units used	779	—	394	181	—
Energy Charge	£4 1 2	£42 0 0	£16 8 4	£6 10 3	£21 0 0
Service Charge	30 0 0	—	—	—	—
Total Cost, Light..	£34 1 2	£42 0 0	£16 8 4	£6 10 3	£21 0 0
Power & Light—Total Cost	£392/19/2	£515/16/6	£420/13/5	£345/6/8	£186/15/-
Consumption per Hour's Run	20.56	31.03	24.02	25.21	15.
Consumption per In- stalled H.P. Hour . .	.587	.596	.64	.613	.731
Average Cost—Per unit . .	2.31d.	1.56d.	1.42d.	1.46	2.59
Per hour	3/10.78	4/0.64	2/9.91	3/0.7	3/2.83
Per 100 c/s capacity	£2/0/1.17	£1/6/3.79	£1/9/0.14	£1/12/10.66	£1/6/8.14

Electric Power Costs in Co-operative Stores.

When analysing these figures, it must be borne in mind that installed H.P. is not comparable with developed H.P. The load being a variable one in cool store practice, it is impossible from the information supplied to give accurate figures, consequently the comparison has been made on the installed H.P. basis. Examining the costs in sterling, one must take into consideration the different tariffs which are an important factor. The two part tariff being in favor of the large consumer against the small. Another factor to be taken into consideration is locality, some districts with cooler night temperatures have a great advantage in reducing running costs. Moorooduc Store's figures are for the year 1927, a complete year. At the same time, it must be remembered that this store is the only one in the series run under the direct expansion system, and being a private store, they can run shorter hours than the co-operative stores, to secure equal results as regards the holding of temperatures. It would be necessary for any

store, contemplating the installation of this class of power to consider their own local conditions and requirements, which are the chief factors, together with the H.P. necessary for their particular plant this naturally varies with the lay-out of each individual engine-room. The H.P., to be installed, being governed by the maximum demand at peak periods.

CALIFORNIA'S FRUIT INDUSTRY.

Nearly 2,000,000 Acres.

Big Reduction in Raisin Acreage.

CALIFORNIA'S FRUIT ACREAGE has been computed by Mr. E. E. Kaufman and W. I. Nielsen, of the Californian Co-operative crop reporting service. The particulars are as at January 1, 1929.

The estimated acreage of tree fruits in bearing for the 1929 season is 1,074,530 acres. This is an increase of 33,128 acres.

There has been a decrease in the total non-bearing acreage about equal to the increase in the bearing acreage. Plantings of fruit trees in

1928 amounted to 27,260 acres, compared with 34,000 acres planted in 1927.

The bulk of the acreage planted is made up of Pears, Apricots, Kadota Figs, Valencia Oranges, and Walnuts.

The bearing acreage of Grapes is declining. It is estimated that there are in bearing for the 1929 season, 634,517 acres of Grapes of all varieties. For 1928 the acreage in bearing was figured at 653,483 acres.

The total acreage of vines removed amounted to 20,270 acres. Out of the total, 1,245 were wine Grapes, 6,949 table Grapes, and 12,076 Raisin Grapes. There are probably around 1,000 acres of table Grapes, and 3,000 acres of Raisin Grapes not being farmed, which are included in the bearing figures; 4,900 acres of Cling Peaches are estimated to have been removed during the past winter.

The acreage of the various varieties removed was:—Tuscans 2,250, New Midsummers 520, Old Midsummers 200, Phillips 1,750, miscellaneous varieties, mostly Levis.

There are 1,903,097 acres of fruit grown in California.

MODERN AIDS TO HORTICULTURE.

As Considered Under Australian Conditions.

Lecture Given at N.S.W. Horticultural Bureau Conference
by Herbert J. Rumsey.

Paper Mulch.

About 15 years ago a sugar-cane grower in Hawaii struck the idea of putting bituminous building paper between his plants to keep down the enormous growth of weeds that had to be dealt with three or four times a year.

I have seen in the Philippines, as well as in Honolulu, the actual forest of scrub that grows in a few months—it is almost incredible. The axe and the brush-hook are the only tools that are of any use in getting rid of it.

This growth was found to be prevented altogether by covering the ground with the building paper. But, the first experiment proved that not only were the weeds controlled and the loss of moisture caused by them prevented, but there was an improved growth. This plan was then extended to the Pineapple plantations, and the effect there was even more marvellous. It had such a noticeable effect that the system became almost general. Specially treated paper was made for the purpose, and now 90 per cent. of the crop is treated with it, and an increase of crop to the extent of 30 per cent. is obtained. Within the last few years the practice has

extended to Queensland,

where startling results have been obtained. In one experiment 8 rows were planted without mulching paper, and yielded 1,750 pines, while a similar number of plants with the mulching paper yielded 2,552 pines.

The results with sugar-cane and Pineapple crops were so startling that a series of experiments was started at the United States Department experimental station at Arlington, West Virginia, within a few minutes' tram ride of Washington, and almost equally phenomenal results were obtained, the increase of crops varying from 73 per cent. with Potatoes to 409 per cent. with Beet, and as much as 691 per cent. with corn. The experiments are still being carried on with a view to working out the best methods of using the mulching paper to get the required results.

In Australia, except for a few years' successful use in the Pineapple fields, mulching paper is still in the experimental stage. Last season was the first opportunity we had of experimenting here, but it was not a very suitable one for a comparative test, or I should say, that by the time most people had the opportunity of trying it, the ground was already dry from the effect of an extended drought, one of the driest spring and summer dry spells that we have had in many years. The mulch paper is designed to hold the moisture already in the soil, but it will not put water where there is none.

I got in one or two experiments early in the season, and these were very promising in their results. Early Potatoes produced a very exceptional crop, early enough to get the highest prices of early spring. Some young fruit trees planted out with a square yard of mulching paper round them grew well, while others without it in the same part of the orchard died from want of moisture.

The experiments of last year gave me an opportunity of finding out some tricks in handling the paper. The first essential is to have the soil between the rows or round the plants fairly smooth and free from lumps. The second and most important of all is to cover up all edges of the mulching paper with soil, so that the wind will not get a hold.

The paper has been made in different widths and thicknesses, but that now available is three feet in width, and rather thin; it must be handled carefully. The first we had was punctured with horseshoe-shaped holes less than three inches apart each way to allow for surface moisture to go through. This weakened the fabric so that it tore very easily, particularly when hot. Later, it has been made with the holes a greater distance apart, which is, to my mind, an improvement. In fact, I really think that it would be as well without them. If the paper is required in narrower widths, to go between rows of vegetables in hand culture, it may easily be cut in the roll with a handsaw, using kerosene on the blade as a lubricant.

The thin paper at present available will not stand walking on and subsequent removal without breaking into pieces, but the pieces will be found very useful for placing round trees and shrubs for several seasons. It remains to be proved if the thicker material would last much longer.

Those who have made exhaustive experiments with the paper mulch in the vegetable garden report that the results obtained seem greater than can be accounted for by its action in preventing evaporation and weed growth. Large numbers are experimenting with it in this State, and I hope to get some local results to report before next season.

Glasshouse and Frame Covering.

The next item on my list of garden helps is what is called "Flexo-glass." It is a cotton cloth specially made, treated with chemicals, and coated with some sort of "white" mineral wax. It is translucent, and is said to allow the ultra violet rays, stopped by glass, to pass through unobstructed.

It is largely used in America for the fronts of poultry houses, as well as for greenhouses and cold frames. Its cost is rather lower than glass, and it is less fragile. I was so much attracted by it when I came across it a month or six weeks ago that I had a small Tomato house put up and covered with it. The house is 12ft. by 8ft.—5ft. to the eaves, the lower two feet being hardwood weatherboards.

The whole cost for the frame and the flexo covering being £6/10/- without labor, using all sawn timber. The cost of this could be considerably reduced by using bush timber. The cost would be little, if any, more than the cheesecloth structures that have been used to some extent, and more lasting. We have had a phenomenal run of frosts since the house has been completed, and the 6 a.m. temperature has never been lower than 33 on the walls. The use of this material would not only exclude the thrip with its following of wilt, but would produce fruit almost if not quite as early as a glasshouse.

Sprinkler Irrigation.

The third item on my list is sprinkler irrigation, and of this I have seen such results during the last twelve or fourteen years that I can unhesitatingly say that there is no other invention that has tended so much to make a

certainty of vegetable crops as overhead sprinkling. Watering by the furrow system has given results, but the amount of water used and the cost of pumping it is altogether disproportionate with the results obtained, as the water is largely lost into the subsoil and into the air by evaporation from the oversaturated surface.

By the use of sprinkler systems the water may be conveyed in pipes to the garden without loss and with the sprinklers distributed just like natural rain, and the longer it takes in reason to distribute the better the effect, as heavy falls will puddle the surface and encourage evaporation.

The use of the sprinkler system will produce a crop every time, and just when the man without it has no crops, the prices are high and the results satisfactory.

The comparatively small amount of water needed to be pumped for the sprinkler systems makes the pumps and power required only a fraction of that needed for flooding or furrow systems. It should, however, always be remembered that the size of the pipes used should be large enough to carry the water for the distance required without much loss of head by friction.

New South Wales

Cultural Hints for September.

Cultivation.

IN many of our inland and table-land districts a dry summer has been followed by an extremely dry winter. The absence of good soaking rains to wet the subsoil thoroughly to a good depth, makes it very necessary that useful falls occur during the spring, otherwise fruitgrowers will be in an unenviable position, particularly in cases where water is not available for irrigation. Under these circumstances extra care should be taken not only to check waste of any soil moisture present, but also to have the soil in the best condition to absorb and retain any rain that falls. Hence a surface that is too fine should be avoided.

Where there has been practically no weed growth since the autumn or winter ploughing, and where the ground has not become compacted through trampling during pruning, spraying, or other operations, it is advantageous to delay the spring ploughing until after the spring spraying programme is completed, but if the soil has become compacted then it would be wise to plough at once. In this connection it should be remembered that the plough leaves the soil in a better condition to absorb the rain than does the cultivator.

Pests and Diseases.

Codlin Moth.—If not already done, a rigorous clean up of the carry-over

grubs should be completed before there is any chance of the moths emerging.

All pome fruit trees should be thoroughly searched, loose bark removed, holes and cracks examined, and any larvae (grubs) that are sheltering destroyed. All boxes or receptacles that contained fruit the previous season should be submerged in boiling water for not less than three minutes. Packing sheds, if at all possible, should be made moth-proof, and when the moths start to emerge from the cocoons it will be found that they collect on the window panes, and it thus becomes an easy matter to destroy them, which should be done daily.

Green Peach Aphis and Black Cherry Aphis.—In places where the oil spray (one part to twenty parts of water), applied when the buds are swelling, has failed to control these pests, a trial should be made of the spray that gave such good results in the experiments for the control of green Peach aphis carried out by the Entomological Branch last season on the Murrumbidgee irrigation area. This spray consists of nicotine sulphate (40 per cent., diluted 1 to 600 parts of water by volume) to which soap is added at the rate of 1 lb. to every 25 gallons of spray. This spray is applied when the buds are well swollen or when the blossom buds are showing color.

Black Peach Aphis.—A close watch should be kept for the black Peach aphis, and as soon as it appears spray thoroughly with nicotine sulphate (1 to 800 parts of water by volume), or with tobacco wash. If within two days of spraying any live aphids remain, the trees should be

Wherever there is a good supply of water it may be pumped directly into the supply line without the intervention of a tank.

The use of a tank is sometimes a convenience in providing a supply for small requirements without the trouble of starting the pump going, but it can add nothing to the pressure of the water. The water from a 10,000 gallon tank six feet high would have no more pressure than that from a 100 gallon tank of the same height. This is a point frequently misunderstood. The pressure is simply the height of the column of water above the point of outlet. It may be reduced by having the pipes too small, and thus causing frictional loss.

Electric Cable for Soil-warming.

The latest aid to gardening is the electric cable for warming hotbeds. This is a Norwegian invention, and where electric power is available at low cost it should have considerable value for starting early plants or preventing damage by frost in houses when the temperature falls below a safe degree. In the cooler mountain districts where the growing season is short some such provision for early starting of plants should be a consideration.

sprayed again. The application should be made by holding the nozzle close to all affected parts in order to break up the clusters of aphids.

Black Spot of Apple and Pear.—In districts where Apple and Pear trees are liable to black spot infection, they should be sprayed with either Bordeaux mixture or lime-sulphur when the buds show a green tip, or at an early spur-burst stage.—From notes by C. G. Savage and W. le Gay Brereton, in N.S.W. "Agricultural Gazette."

Importance of Apple Export.

At the monthly fruit marketing conference great stress was laid on the necessity for organised export of fruit.

Mr. A. M. Weymark (fruit sectional committee of the Chamber of Commerce), said that this year there was a poor crop of Apples, except for Tasmania and Western Australia, and that during May 800,000 cases of American Apples were shipped to England. There must be organised export in Australia if they were to compete with America.

The Chairman (Mr. Watson) said that it was hoped that other States would follow the lead of New South Wales in having a system of crop forecasts.

Miss Geach (Housewives' Progressive Association) said that more attention should be paid to the local market and fruit brought within the purchasing power of the people. Continuing, she stated that there should be regularity of shipping with Singapore, and more publicity,

Control of Red Spider.

(By P. H. Thomas, Chief Horticulturist, Tasmanian Department of Agriculture.)

AT the commencement of the 1928-29 season, it was decided to carry out a further series of tests toward the summer control of red spider, which is becoming a serious pest in the majority of Tasmanian fruit districts. It is now generally recognised that two species of "spiders," or mites, are troublesome to the fruitgrowers:—

1. *Bryobia pratensis*—a non-web spinning mite, which is easily distinguished by the length of the first pair of legs, and
2. *Tetranychus telarius*—a web-spinning species, more uniform in appearance, with little variation in the length of the legs.

Bryobia pratensis, which is usually more prevalent, can be largely controlled by late winter sprays. Previous experiments in Tasmania have shown that applications of a commercial miscible oil (1-10 and 1-12), or lime sulphur (1-8 to 1-10) have proved effective in this respect besides being invaluable in controlling other pests such as aphids, scales and insects which hibernate upon the trees. However, no matter how thorough the application, a certain number of eggs invariably escape the winter sprays, and if favorable climatic conditions prevail, the mites will rapidly increase. This, together with frequent infestations from other orchards, generally necessitates further measures of control during the growing season.

Tetranychus telarius generally appears about mid-summer, the mites ascending from the soil, breed rapidly in the leaves and branches of the tree, and kill the healthy leaves, thereby reducing their vigor and cropping capacity.

Unfortunately previous experiments have shown that contact sprays cannot be applied at strengths sufficient to kill both eggs and mites when the tree is in leaf, owing to the danger of scorching the foliage and russetting fruit.

In the series about to be described, different sprays at varying strengths were applied in order to try and find the safest and most effective means of controlling the insects. Four experimental plots were selected in the following districts:—

- (1) Lenah Valley—H. E. Grueber's orchard;
- (2) Bagdad—G. Butler's orchard;

(3) Franklin—Messrs. Brennan Bros.

(4) W. Tamar—H. Ferguson's orchard.

The ensuing tables give the varieties treated, spray strengths and results as observed in the various localities.

LENAH VALLEY.

Varities:—Cleo., Sturmer, Scarlet.

Plot.	Applications.	Date.	Observations.
1. Gargoyle Sp. Spray. Oil . Gal.	1	16/11/28	Good kill, partial leaf fall & scorch.
Water (to make) "	100		
Gargoyle Sp. Spray Oil . "	1	19/12/28	Do. No scorching.
Water (to make) "	100		
2. Lime Sulphur "	1	16/11/28	Good kill, partial leaf fall & scorch.
Water "	60		
Lime Sulphur "	1	19/12/28	Medium kill, no scorching.
Water "	100		
3. Lime Sulphur "	1	16/11/28	Good kill, slight leaf fall & scorch.
Flour Paste "	6		
Water "	60		
Lime Sulphur "	1	19/12/28	No scorching.
Flour Paste "	6½		
Water "	80		
4. Lime Sulphur "	1	16/11/28	Good kill, slight leaf fall & scorch.
Flowers of Sulphur . . . Lbs.	3		
Casein Ozs.	4		
Water Gal.	60		
Lime Sulphur "	1	19/12/28	Do. No scorching.
Flour Paste "	4		
Flowers of Sulphur . . . Lbs.	4		
Water Gal.	80		

BAGDAD.

Variety:—Sturmer.

1. Gargoyle Sp. Spray. Oil . Gal.	1	19/11/28	Good kill.
Water (to make) "	100		
1 row do. and Ars. Lead Paste Lbs.	5		
Spec. Spray Oil Gal.	1	18/12/28	Do.
Water "	100		
1 row Ars. Lead Powder Lbs.	3½		
2. Lime Sulphur Gal.	1	19/11/28	Fair kill.
Water "	120		
1 row do. and Ars. Lead Paste Lbs.	6		
Lime Sulphur Gal.	1	18/12/28	
Water "	100		
1 row do. and Ars. Lead Powder Lbs.	3½		Good kill, partial leaf fall & scorch.
3. Lime Sulphur Gal.	1	19/11/28	Fair kill.
Flour Paste "	8½		
Water "	120		
1 row do. and Ars. Lead Paste Lbs.	6		
Lime Sulphur Gal.	1	18/12/28	
Flour Paste "	6		
Water "	80		
1 row do. and Ars. Lead Powder Lbs.	2½		Good kill and cover slight leaf fall and scorch.
4. Lime Sulphur Gal.	1	19/11/28	Fair kill.
Flour Paste "	6		
Flowers of Sulphur . . . Lbs.	6		
Water Gal.	120		

Plot.	Applications.	Date.	Observations.
1 row do. and Ars. Lead			
Paste	Lbs. 62		
Lime Sulphur	Gal. 1	18/12/28	
Flour Paste	" 4		
Flowers of Sulphur	Lbs. 5		
Water	Gal. 80		
1 row do. and Ars. Lead			Good kill and cover,
Powder	Lbs. 2½		slight leaf fall and scorch.

FRANKLIN.**Variety:—Scarlet.**

1. Volck	Gal. 1	28/11/28	Moderate kill and cover.
Water (to make)	" 80		
Volck	" 1	20/12/28	Good kill and cover.
Water	" 80		
2. Lime Sulphur	" 1	28/11/28	Good kill, partial leaf fall & scorch.
Water	" 80		
Lime Sulphur	" 1	20/12/28	
Water	" 100		
3. Lime Sulphur	" 1	28/11/28	Good kill and cover; slight leaf fall and scorch.
Flour Paste	" 6½		
Water	" 80		
Lime Sulphur	" 1	20/12/28	Good kill and cover.
Flour Paste	" 8		
Water	" 80		
4. Lime Sulphur	" 1	28/11/28	Good kill and cover; slight leaf fall and scorch.
Flour Paste	" 5		
Flowers of Sulphur	Lbs. 4		
Water	Gal. 80		
Lime Sulphur	" 1	20/12/28	Good kill and cover.
Flour Paste	" 5		
Flowers of Sulphur	Lbs. 4		
Water	Gal. 80		

WEST TAMAR.**Variety:—Sturmer.**

1. Gargoyle Sp. Spray. Oil . Gal.	1	16/1/29	Good kill.
Water (to make)	" 100		
Special Spray Oil	" 1	5/2/29	Good kill.
Water	" 100		
2. Lime Sulphur	" 1	16/1/29	Moderate kill.
Water	" 80		
Lime Sulphur	" 1	5/2/29	Fair kill.
Water	" 80		
3. Lime Sulphur	" 1	16/1/29	Good kill and cover.
Flour Paste	" 4		
Water	" 80		
Lime Sulphur	" 1	5/2/29	Good kill and cover.
Flour Paste	" 4		
Water	" 80		
4. Lime Sulphur	" 1	16/1/29	Good kill and cover.
Flour Paste	" 4		
Sublimed Sulphur	Lbs. 4		
Water	Gal. 80		
Lime Sulphur	" 1	5/2/29	Good kill and cover.
Flour Paste	" 4		
Sublimed Sulphur	Lbs. 4		
Water	Gal. 80		

In all the spray mixtures detailed, the total quantity of spray made is indicated by the amount of water given, e.g.:

1 gallon Lime Sulphur.

4 gallons Flour Paste.

80 gallons Water.

means that 75 gallons of water were required, and not that 80 gallons were added to the five gallons of other constituents. One gallon flour paste contains 1 lb. of flour.

A brief account of each of the plots and results noted, may be of assistance at this point in explaining the general results described.

(1) At the Lenah Valley plot, the treatments were applied in very hot weather, especially during the first application. Scorching of the foliage was experienced with all sprays, and particularly with the special spraying oil and lime sulphur applications (plots 1 and 2). These were put on

early in the morning, and subsequently, subjected to the heat of the day over a longer period. It was noticeable, however, that infection by *Podosphaera leucotricha* (powdery mildew), and *Sphaeropsis malorum* (leaf spot) were present, and leaves affected with these would probably have dropped in any case, and the spraying merely accelerated this fall. After the second examination it was noticed that though the spider had been controlled all through, the sulphur sprays seemed, in addition, to have checked the leaf spot to some extent when compared with the special spraying oil.

(2) Probably the most interesting plot was that a Bagdad, where arsenate of lead was combined with the various sprays on each occasion. Lime sulphur were put on at very weak strengths on the first occasion and apparently no damage resulted when arsenate of lead was mixed with these. On the second occasion, when the strength of the lime sulphur was increased to 1-80, the arsenate of lead mixture caused a lot of scorch, particularly where the flour paste was omitted. The arsenate of lead, however, combined quite satisfactorily with the special spraying oil, and caused no damage to foliage.

Many of the Sturmer trees in this experiment were badly affected with powdery mildew, and the lime sulphur, sulphur flour paste mixture seemed to have had an appreciable effect on this fungus, the fine grains of sulphur still adhering to the leaves and being visible a month after the second application. This was instanced in the new healthy tip growths breaking from the previously mildew affected laterals, the general condition of the plot in this respect being a distinct improvement on the summer oil and control plots.

Leaf spot was also less prevalent on the lime sulphur plots and, as has been mentioned, scorching on plots 3 and 4 (which contained flour paste) was less than where lime sulphur was used alone.

On the Bagdad plot a few red spiders were found after the second oil application. This may have been due to the foliage protecting the insects, in actual practice it being found impossible to completely cover all the leaves and branches with spray.

(3) The plot at Franklin showed similar results to that at Lenah Valley, and all the spiders which the sprays touched were killed. Also the trees treated with lime sulphur suffered to some extent with leaf scorch, and particularly plot No. 2,

where lime sulphur was applied alone. This may have been partly due to these trees having received a lime sulphur spray a few weeks before.

The Volck Summer oil, used on the first occasion, was thin and made a poor mixture with water, but a fresh tin at the second application made a good emulsion and produced satisfactory results in this control of spider.

(4) Applications were commenced at a later date on the Tamar plot, owing to the light infestation.

The special spraying oil left very few spiders alive, and the chief source of reinfestation was from leaves which had been covered by spray material, these usually amounted to several dozen in the thicker parts at the base of the tree.

Conditions were much the same in plots 3 and 4, but in regard to plot 2 (lime sulphur only), 50 per cent. of the spiders were still alive, this, however, might in part be attributed to a heavy rain, which occurred shortly after this spray was applied on the first occasion. After the second spray, plot 2 still failed to compare favorably, though the remaining treatments had apparently given a complete control.

As might be expected, plot 4 had some controlling influence on powdery mildew, but spraying was commenced rather late to have much effect in this direction.

Certain points in regard to the successful and easy preparation of the lime sulphur, sulphur flour paste spray, are worth mentioning. A thin flour paste is first made by adding small quantities of cold water to dredged flour. Boiling water at the rate of 1 gall. to 1 lb. of flour is then added to the paste, thoroughly stirring until it becomes clear. You can then dilute with cold water. The flowers of sulphur is dredged and made into a paste with the aid of some of the diluted clear flour paste, and when thoroughly mixed, added to the main flour paste, agitating thoroughly the while. The whole can now be added to the water in the spray pump. It is advisable to strain the flour paste, or flour paste and sulphur, through a piece of hessian when putting into the spray pump, so as to eliminate any lumps, and a good agitator is essential to the successful application of the spray; otherwise the sulphur which is merely in suspension, will sink to the bottom.

Summary.

The series of experiments carried out have demonstrated that red spider can be effectively dealt with during the growing season by a number of easily prepared sprays.

The summer oils, "Volck" and "Gargoyle Special Spraying Oil," were found effective in controlling the mite, and can be combined with the codlin moth sprays without causing damage to the foliage or fruit.

Lime sulphur, in combination with flour paste, is more effective than lime sulphur only, as the paste acts as a spreader, and gives a more uniform cover.

The lime sulphur, sulphur, flour paste spray was found to be effective, not only for controlling spider, but as a fungicide, particularly for powdery mildew and leaf spot. The adhesive effect of the flour paste also tends to seal spider eggs for a period and prevents the mites from escaping when once touched by the spray. As

in all other sprayings, the efficacy of the sprays is largely governed by the thoroughness with which the operation is carried out.

The results of the tests emphasise the uncertainty of lime sulphur and arsenate of lead mixtures, and the great caution with which lime sulphur at strengths greater than 1-80 should be treated, during the growing season.

This work has been rendered possible by the assistance of Messrs. H. E. Grueber, Lenah Valley; G. Butler, Bagdad; Brennan Bros., Franklin, and H. Ferguson, West Tamar, in co-operation with Messrs. P. H. Thomas, T. D. Raphael, and A. S. Brennan, of the Department of Agriculture.

Tasmanian Fruit Conferences

Important Decisions.

THE ANNUAL CONFERENCES of Tasmanian fruitgrowers were held at Launceston and Hobart on July 19 and 23 respectively.

Close attention was paid to the business before the meetings, the principal item being the new Apple and Pear export grading regulations. Strong exception was taken to the new regulations, and particularly to the manner in which they were introduced. Tasmanian growers had no effective voice in the matter.

Mr. B. J. Pearsall, M.H.A., presided at both conferences.

At Launceston the Chairman, in moving the adoption of the annual report, said that Tasmania was by far the heaviest exporting State. For the past five years the average quantity of fruit exported was 1,427,629 cases, and the average figures for the Commonwealth were 2,391,569 cases. Levies on overseas exports yielded £706, and on interstate fruit £397. After providing for all expenses, there was a credit balance of £1,664.

Grading Regulations.—In moving a resolution supporting the State Fruit Advisory Board and the Minister for Agriculture in their protests to the Federal Government against the proposed new fruit regulations, Mr. F. Peacock said it would be a drawback for growers to have to plane the ends of their cases before sending them away. The prohibition of the export of the plain grade Apples would be costly to Tasmania. The Crow Egg Apple was a good export variety, and should not be prohibited. The new regulations showed an entire lack of understanding on the part of the Fed-

eral Government. The motion was seconded by Mr. B. H. Saunders, and supported by Mr. J. P. Piggott, M.H.A., and Mr. J. H. Astell.

Mr. H. J. Knott, Hadspen, said the idea of the Federal Government was to improve standards. There was no doubt Tasmania was sending away some rubbish at the present time.

It was further decided to obtain legal advice and, if possible, to obtain the injunction restraining the Minister for Markets from enforcing the regulations.

Improved Packing.—On the motion of Mr. N. Vincent, Glengarry, it was decided to recommend the Advisory Board to organise meetings in all fruitgrowing districts to impress on fruitgrowers the vital necessity for improving the packing of Tasmanian fruit for interstate and export markets. Mr. P. H. Thomas, State Fruit Expert, said that packing experts would be sent to districts when requested, to instruct in packing.

Insurance.—Mr. Astell's motion, suggesting a scheme of compulsory insurance by all overseas exporters to guarantee the cost of production, was seconded by Mr. B. H. Saunders. The meeting was divided. The resolution was carried by a small majority.

State Marketing Boards.—In moving in favor of State Marketing Boards to control exports, Mr. H. Robinson (Frankford) said the Minister for Markets should call conferences in the several States to appoint such Boards to control fruit exports and appoint representatives abroad. The motion was opposed by several speakers. It was considered that this would place

such power in the Minister's hands as had already been wholeheartedly rejected by Tasmania. The motion was carried.

Interstate Markets.—Mr. N. Vincent said growers needed more advice regarding interstate marketing, and moved that the Agricultural Department send their experts to Sydney for two weeks in April or May, to obtain firsthand knowledge and report to the growers.

Mr. F. E. Ward, Director of Agriculture, said he believed this was out of the Department's province. The motion was lost.

Advisory Board Criticised.—A letter was read from the Tamar Fruit-growers' and Farmers' Association, disagreeing with the Advisory Board in declining to call interstate conference desired by Victorian Fruitgrowers' Cool Stores Association of Victoria. Mr. Reid, Tamar Valley Co-operative Company, moved that, as the State Fruit Advisory Board is not functioning, as originally intended, this Conference recommends that a new Board be formed to be called the State Fruit Board, consisting of bona fide growers only, three to be elected by the Northern Conference and five from the South—to be elected annually, and have a salaried Secretary.

Neil Campbell, M.H.A., said the Board was strengthened by having representation from other than growers. A full time Secretary could do much good, but the work of Mr. P. H. Thomas was very satisfactory. After a lengthy discussion the motion was lost and a vote of confidence in the Board was carried.

A further resolution recommending that the Annual Conference be held alternatively in Hobart and Launceston, and that northern members to the Board be elected every two years was lost, the present system being approved.

Messrs. B. H. Saunders, A. H. Weedon and N. Campbell, were elected Northern representatives.

Wharf Representative.—It was decided to recommend the appointment of a wharf representative in the north for three months, similar to the arrangements at Hobart.

American Competition.—Decided on the motion of Mr. N. Vincent to urge the incoming Advisory Board to make representations to the British Government for some protection against the dumping of the American Apples in England, thus ruining Australia's early markets.

Mr. H. Thornycroft, Agricultural Department, submitted a scheme of insurance against hail damage. It

was resolved that specifications be submitted to saw millers, showing exactly what was desired in hardwood cases.

Conference at Hobart.

THE Annual Conference of Southern Tasmanian Fruit-growers was held at Hobart on July 23. The chairman, Mr. B. J. Pearsall, said the new grading regulations, if enforced, would inflict serious damage to Tasmania. In moving the adoption of the annual report and balance-sheet, the chairman said Tasmania had 33,332 acres under fruit, yielding a return value of £1,445,910. Good work had been done to assist the small-fruit growers. The State Premier and Mr. Harold Clapp, Victorian Railways, had also been helpful.

Mr. W. J. McWilliams, M.H.R., who officially opened the conference, said that the whole procedure adopted in the framing of the new Apple export regulations, was wrong. Growers should make regulations. Tasmanian growers were not represented. It was intolerable that half a dozen inspectors representing the other States should frame regulations governing Tasmanian fruit exports. Some of the regulations were neither fair nor reasonable. Fruitgrowing was Tasmania's leading industry. The value of the wool industry was about £1,118,000 a year, and the fruit industry was £1,120,000. There was a serious danger to the proposed wood pulp industry being of great detriment to the fruit industry.

The conference strongly supported the Geeveston fruitgrowers in their efforts to obtain suitable areas for timber and settlement from the Government under the Wood Pulp Act.

Dried Apple Bounty.—Mr. F. Peacock submitted a statement on behalf of fruit evaporation, setting out the case in support of a bounty on dried Apples.

On the motion of Messrs. Skinner and Davies, it was decided to request the Commonwealth Board of Trade to favorably consider the request for a bounty on the export of dried Apples.

New Grading Regulations.

In moving "that this conference reports to the State Fruit Advisory Board, and the Minister for Agriculture in their protest to the Federal Government against the proposed new fruit regulations," Mr. F. Peacock said that in the regulations which had been gazetted, the proposal for planed end cases became operative on January 1. The plain grade in Apples and Pears would operate in January, 1931, while certain varieties

would be eliminated. In response to a protest, the Minister for Markets had stated that for any future regulations the growers would be represented. If plain grade Apples could not be exported they would slump the Australian market. The Crow Egg variety, proposed to be eliminated, had brought 15/- or 16/- per case in England.

The resolution was vigorously supported by several speakers. Mr. J. P. Piggott, M.H.A., said that eliminating the plain grade would give U.S.A. another week or two on the early European markets. The "arm-chair gentlemen" in the Department of Markets were trying to make regulations fit the fruit, but the fruit could not be grown to fit the regulations. He would be disappointed if Tasmanian growers allowed the Markets Department to prevent them sending their fruit away, even if they did not adopt the regulations.

Mr. A. Davies, Cygnet, said that the planing of cases would add 6d. per case. His "plain" grade Apples were bringing good prices. Mr. W. E. Shoobridge, Bushy Park, stated that Covent Garden growers appreciated the Tasmanian hardwood case.

Hon. L. M. Shoobridge, M.L.C., said certain regulations were necessary, but hampering regulations were not. The interference of the Federal Government was unjustified.

Mr. O. J. Morrisby, Sandford, supported this view. He had sent planed end cases, but British merchants said the extra expense was not worth while.

Mr. A. C. Seabrook said the Minister had deceived the growers when he advocated the Fruit Export Control Bill. If growers had approved of this Bill the Minister could have claimed the growers had given him power to make the present regulations. The Minister had given an assurance that no regulations would be made unless the Tasmanian Advisory Board was considered. It would be necessary, in future, to have the Minister's words in writing. The motion was further supported by Mr. Clarke (Wattle Grove), C. W. Frost (Margate), H. Bisdee, H. A. Warner (New Norfolk), C. Thomson (Geeveston), Mrs. M. Calvert, and others, and carried.

It was further decided, on the motion of Messrs. G. Clarke (Wattle-grove), and R. Harvey (Cygnet), to recommend the obtaining of legal advice in order to obtain adjunction refraining the Minister from enforcing the regulations.

The conference confirmed many of the resolutions carried at Launceston.

The proposition for compulsory insurance was accepted by a narrow margin but the resolution favoring State Market Boards was defeated by a large majority.

Conference with Senator Ogden.

Members of the Tasmanian Fruit Advisory Board conferred with Senator Ogden, Assistant Minister. After discussions, Senator Ogden urged the State Fruit Advisory Board and the growers to make direct representation to the Minister for Markets.

The Premier, Hon. J. C. McPhee, read a letter from Sir Neville Howse, representing the Prime Minister, stating it was considered the regulations would have an uplifting effect on the quality of Australian fruit exported overseas. The more rigid standards of qualities adopted by competing countries made it necessary for Australian grades to be improved. New Zealand competition was a serious factor. Argentine and South Africa were also competing.

PERSONAL.

Hon. L. M. Shoobridge, M.L.C., of Hobart, is continuing his valued activities to assist the fruit industry. Mr. Shoobridge has performed magnificent service for the industry, and the Commonwealth generally for over 50 years. As chairman of the committee in charge of the All-Australian Fruit Show to be held at Hobart in the autumn of 1930, Mr. Shoobridge is maintaining his splendid record for service. He seems to have the secret of perpetual youth.

Mr. P. Malloch, manager Irymple Packing Pty. Ltd., Irymple, Vic., is leaving for California very shortly to investigate the dried fruit situation there.

Mr. E. Seary, manager Renmark Fruitgrowers' Co-operative Co. Ltd., and Mr. H. Showell, of Renmark, recently left for California, where they are investigating particular phases of the de-hydration and sulphuring processes now being practised in California.

Mr. H. Sharman and Mr. McKenzie, of Messrs. Clements & Marshall Pty. Ltd., of Launceston, who are interested in fruit shipments from Northern Tasmania, recently visited Victoria.

Mr. H. J. Bishop, Chairman of the South Australian Fruit Marketing Association, recently visited Victoria. He addressed a meeting of growers at Croydon, and also interviewed the Minister for Markets (Mr. Paterson).

THE OPEN FORUM.

Correspondents Views.

THE SUGAR EMBARGO.

(To the Editor, "Fruit World.")

Sir,—Mr. Blakeley, M.H.R., when speaking of the sugar industry at Cairns, said:—"The increased price in the cost of sugar was actually 1d. a pound, but the increased cost of jam was about 5d. Mr. Blakeley evidently has no knowledge of the matter. In 1914 Australian jam manufacturers and cannerys were purchasing sugar at £18 a ton, today the price has risen to £30/6/8 a ton, or, in other words, an increase of £12/6/8 per ton. To show the increase in the price of jam I have taken out figures showing the price of four of the best-known varieties in 1914 as compared with 1929:—

	1914.	1929.
Per Doz. Tins, Per Doz. Tins,		
Variety. 18 lb. Weight. 18 lb. Weight.		
Apricot . . . 7/3		7/6
Plum . . . 6/3		6/6
Black		
Currant . . . 9/6		9/9
Melon		
(group) . . . 7/-		7/-

The increase in the price of jam has been infinitesimal as compared with the increase in the price of sugar. The Australian fruitgrowers, jam manufacturers, and cannerys have been repeatedly informed that the reason why the sugar industry is particularly favored is that it affords the surest and simplest way of peopling the north from a defensive standpoint. The defence of Australia is a national question, therefore, surely it is reasonable that anything done in the interests of a defence policy should be a charge on the whole of the community. If it is the Government's desire to give to the sugar industry further assistance over and above a duty of £9/6/8 a ton, such extra assistance should take the form of a bounty, and be a charge on consolidated revenue. At the present time the best Java sugar is being quoted at £12 a ton c.i.f. and e. Australian ports, and if the duty of £9/6/8 is added the c.i.f. and e. duty paid price amounts to £21/6/8 a ton. Therefore sugar can be landed, duty paid, at £9 a ton under the price at which sugar is being offered to manufacturers under the sugar agreement. Upwards of 30,000 tons of sugar are used annually by jam manufacturers and cannerys for processing purposes, and if this amount is multiplied by the £9 a ton,

representing the difference between the landed price of sugar from overseas, Australian jam manufacturers and cannerys are actually paying approximately £270,000 a year more than they would be called upon to pay if the embargo against importation did not exist. The sugar embargo has seriously prejudiced and retarded the progress and development of the Australian fruitgrowing, jam, and canning industries, and it is only by adjustment of the sugar position that these industries will be placed on a sound economic footing—Yours, etc.,

JAMES L. MOORE, Gen. Secretary,
Commonwealth Jam Preserving and
Condiment Manufacturers' Association.
August 22.

A Bishop's views.

Sugar Embargo Condemned.

Mr. Geo. W. Summers, of Coromandel Valley, S.A., has sent to the Editor a clipping from the "Australian Christian World," giving the views of the Bishop of North Queensland on the question of the sugar embargo.

The Bishop states that he would not withhold his views simply because they would invite criticism; he was used to being assailed in the press. The sugar embargo was wrong. Sugar lands were selling at £150 per acre. Some men were making great fortunes at the expense of the whole country. Did their only hope lie in British preference, the continued embargo, restriction of areas, and a refusal of permits to grow cane? The permit was given to A, but refused to B. No industry thus unjustly controlled could survive. Queensland cane growers could increase their crops enormously, be content with a first crystallisation of the sugar, turn the molasses into power spirit, make megasse board, compressed yeast fodder, fertilisers and other products, so that the sugar "would be but a by-product of the cane-growing industry."

Australians in their wonderful country had the courage, the capacity and the endurance to make good alongside anyone in the world, but they must not depend on a British tariff which raised the price to consumers there.

A South Australian Complaint.

Continuing his letter, Mr. G. W. Summers, of Coromandel Valley, S.A., says:—

"The executive of our Fruit Growers' Association had a number of complaints that the public were unable to get a bag of sugar when jam fruit was available. On making enquiries from tradesmen, they assured us they were unable to get more than one-third of their requirements! There is no shortage of sugar, and when jam fruit is about, we ought to be able to get all we require."

ANSWERS TO CORRESPONDENTS.**Cool Storage Information.**

D.F.C., Huonville, writes:—

"Would it be possible for you to obtain some information for me as to the cost of running a cool store for my own use, to cool about 10,000 cases? Which would be the simplest system to look after as I wouldn't want to employ an engineer to run it?"

"The Hydro Electric comes within about 1½ miles of where I thought of building, and would depend on getting the line extended to run the store."

"What would be, roughly, the cost of erecting a store of the above mentioned size, including machinery, etc.? I hope this will not be too much trouble, but there are no stores of that size in Tasmania, and I thought perhaps you may be able to get more reliable information in Victoria, as I believe there are several stores of that size there."

Answer. — Small cool store, about the 10,000 case mark, runs into roughly 10/- per case to erect and equip, all charges included. The running cost of 10,000 case job can be ascertained from the local power supply people. This information is supplied by R. Werner & Co. Pty. Ltd., who have equipped most of the cool stores in Victoria. Continuing, they state:—A 15 h.p. motor would be required, and under Victorian conditions would use about 11,000 to 12,000 units per year. Probably 10,000 units per year would be enough in Tasmanian conditions.

If power is charged for on the horse power basis, i.e., so much per horse power per month, or on the maximum demand rate, then a slightly smaller plant, running longer hours, would suit. If on the straight-out unit rate, then the 15 h.p. job is the best proposition, and allows for a little extension of case capacity.

In regard to attention to plant, it would not be necessary to employ an

engine driver, as very little attention is required.

The Direct Expansion System, i.e., with wall coils or overhead coils is the simplest and now almost universally adopted.

Reference to the figures given on page 352 of the "Fruit World" of September 1, 1928, gives very useful information. We are sending you a spare copy, also a rough lay-out for a 10,000 case store. Is running water available for the condenser, or could a dam be arranged for storage of condenser water?

MANURING GRAPE VINES.

M.L., Swan Hill, Vic., writes:—"I am a Sultana dried fruit grower (vines planted in 1923) I have had four crops to date, my vines have averaged 35 cwt. to the acre of dried fruit, and this season I am now pruning. I find that the canes are not so vigorous as other years. I put four tons super and one ton potash on 15 acres last season. So I thought to make the canes vigorous again and also larger, I am putting one ton sulphate of ammonia on say the second watering, and three tons of super first watering."

"Would you recommend the application of sulphate of ammonia on about the second watering, and if you think this would benefit materially the canes in size and vigor for the next season's crop. My idea of the 2½ per cent. super to apply is about two tons put on before the first watering and about two more tons on about the third watering."

Answer.—Mr. F. de Castella, Govtella, Government Viticulturist, advises as follows:—

The reduction in the vigor of Mr. Lewis' Sultanas is, no doubt, the result of several seasons' good fruitings and insufficient feeding, especially as regards nitrogenous manure. Last year's application of four tons super and one ton potash, on 15 acres, was a reasonable dressing so far as these elements are concerned, though many growers find it pays to give considerably more super. It lacks nitrogen though, and this is the element that increases growth. Phosphoric acid and potash are very necessary; they improve the fruit and give tone to the vine, but they have little influence on wood development. The proposal to apply, in addition, ammonium sulphate (one ton to 15 acres) is therefore sound. It will improve the wood. If growth is very poor, this dressing could, indeed, be increased by 50 per cent., with advantage.

The time of application, as suggested, viz., sulphate of ammonia at

the second watering and super in two lots, half before the first watering and half at the third watering, is much less satisfactory. The vine makes most of its growth before blossom—to benefit this nitrogen should be made available early. Two separate applications are often recommended so as to avoid loss in the drainage water, but this is scarcely likely under Mr. Lewis' conditions and one single application before the vines sprout is quite satisfactory.

As regards super, there is even less reason to make two separate applications—a late dressing is indeed of little use to the vine the season it is applied. The vine absorbs the bulk of its annual phosphoric acid supply before blossom. If applied after blossom it will remain in the soil for some nine months before it can benefit the vine, and during this time there is loss by reversion. The whole of the super should therefore be applied at the one time and this should be early—at any rate before the vines sprout. Though potash absorption continues later it is best to make one early application. It is held by the soil until the vine needs it and not removed by drainage water.

Fairly deep application is advisable if quick results are desired—about the depth of the winter ploughing, so that the manure may be in close proximity to the wine roots. Manure can conveniently be applied at the winter ploughing by means of special plough attachments. It is not necessary to sow it in every furrow. Two furrows, one on each side of the vine row and eighteen inches to two feet from it, are sufficient.

Strange Advertisements.

"For Sale.—Baker's shop. Good trade. Excellent oven. Owner been in for 17 years."

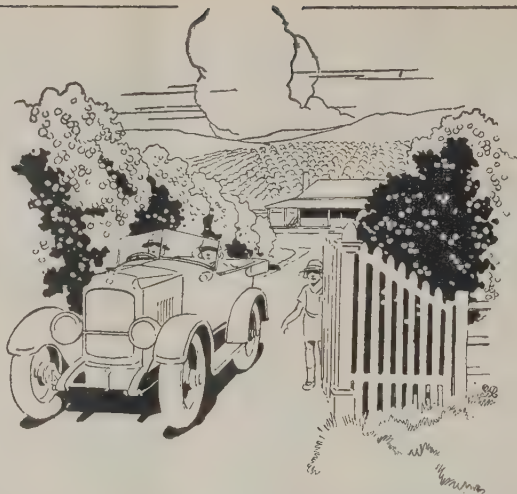
"Cheap!—Splendid bulldog for £2. In good condition. Teeth sound, eats anything, specially fond of babies."

"For Sale.—Old-fashioned cottage to be sold or let by gentleman covered in red creepers with honey-suckle on the porch."

Clear as Mud.

Barrister (to flustered witness).—New, sir, did you or did you not on the date in question, or at any other time, say to the defendant or anyone else that the plaintiff was a matter or no matter or otherwise—answer me, yes or no?"

Bewildered Witness—"Yes or no what?"



Prosperity in Fruitgrowing

is largely a matter of using the **RIGHT** fertilisers in **SUFFICIENT** quantities

Those days are gone forever when superphosphate "straight" supplied the only orchard soil requirement. The importance of **NITROGEN** is now better appreciated, and nitrogenous fertilisers used by individual growers on a scale of liberality hitherto regarded as recklessly extravagant are paying handsome "dividends."

The return is the actual test of any fertiliser.

At the Berri Experimental Orchard, (S.A.) in a series of Tests extending over eight years, an application of 5 cwts. of **sulphate of ammonia** per acre has proved the most effective fertiliser for citrus fruits.

Last Autumn the South Australian Agricultural Press reported on a crop of apricots on the block of a Murray River Grower, who, when asked the secret of the remarkable size of the fruit, replied that he had been liberal in his use of **SULPHATE OF AMMONIA**.

What has been called the most productive apple orchard in Australia uses 2 cwts. of **SULPHATE OF AMMONIA** per acre every year, in a fertiliser programme, which on a conservative estimate, costs every penny of £12 per acre.

Use the **RIGHT** fertilisers, but use them in **SUFFICIENT** quantities.

Use **SULPHATE OF AMMONIA** in anything from 1 to 2 cwts. per acre

Literature from

*The Australian Sulphate of Ammonia
Propaganda Committee*

360 Collins Street, MELBOURNE

Horticultural Research Station.

Experimental Orchard for the Goulburn Valley.

Stocks, Varieties, Manuring, Pruning, etc., Will be Tested.

THE establishment of an experimental orchard by the Victorian Government will be welcomed by all growers. For some years there has been an urgent request from the Goulburn Valley for this type of demonstration orchard, although a difference of opinion existed as regards the site.

The Minister of Agriculture (Mr. J. W. Pennington), states that various sites have been inspected by the Superintendent of Horticulture (Mr. J. Ward), and after due consideration a selection has been made. The site decided on is the property of Mr. J. F. Dunlop, an area of approximately 104 acres, situated some two miles east of Tatura, and bounded by the Tatura-Toolamba and Tatura-Shepparton roads; the block is suitable for an irrigated orchard, and preliminary examination has shown the soil to be typical of the district.

The Department of Agriculture is purchasing the property, and preliminary work will begin at once. In order to ensure future accuracy, it will be necessary for the Department to select and propagate its own trees; hence for several years progress with certain investigations will be slow. The most important feature of investigational work on fruit is care in the selection of material, and the foundation of a permanent research station must be made with the greatest of care. Investigations on many and varied problems are proposed, the most important among these being as follows:—

1. Fruit Tree Stock Experiments.—Varieties will be worked on various stocks, and predominant individuals isolated and propagated.

2. Variety Trials, Cross Pollination Studies, and the Breeding of New Varieties.—This work will include selection of best strains from the types, and varieties grown in Victoria, and the systematic trial of introduced varieties; investigation on the causes of faulty setting of blossoms, and of the compatibility between varieties, will be carried out hand in hand with fundamental work on fruit breeding.

3. Manuring Experiments.—For this work absolutely uniform nursery stock must be commenced with. Fertiliser trials will be carried out

in conjunction with laboratory experiments. Special attention will be given to laboratory work as an adjunct to field work, in studying fruit tree nutrition problems.

4. Pruning Investigations will also be pursued with the chemical laboratory as a valuable aid to field investigations.

Other observations will be made on irrigation matters whilst the various problems in control of orchard pests will be continued on existing lines—that is on established orchards in the district.

* * *

The Victorian Government is to be congratulated on their progressive enterprise. While it will take years before definite results can be announced, nevertheless this experiment station will be the centre of animated interest from now onwards. The fact of its existence will tend to stabilise the industry and give heart to the growers.

Scientific workers and growers will now be able to work side by side in elucidating the problems which confront the industry, and great benefits should accrue.

SOUTHERN FRUITGROWERS' ASSOCIATION.

AT a meeting of the above Association on August 8, there were present:—W. A. Webb, President; J. Tully, W. Mock, G. Mock, W. T. Sellar, and Secretary. Apologies were received from R. M. Finlay, L. Pepperell, J. H. Lang, and R. J. Lorimer.

It was resolved that a letter of condolence be forwarded to Mr. L. Pepperell on account of his recent bereavement through the death of his brother.

Pest Control.—Mr. J. M. Ward (Superintendent of Horticulture) wrote, stating that the Department was willing to conduct experiments for codlin moth and aphid in the Doncaster district. Messrs. T. H. Petty, Templestowe, and W. A. Thiele, Doncaster, offered their orchards for experiments.

Wages Awards.—The Premier wrote, acknowledging the resolution carried at the annual meeting—"That in view of the abolition of the Federal Arbitration Court in the near future,

the State Premier be approached with a view to leaving all rural industries exempted from the operations and awards of any system of State industrial regulations." Growers contended that they were subject to climatic conditions, over which they had no control. With perishable products, growers had no means of price fixing, consequently were ruled by the laws of supply and demand.

The executive meets the first Thursday in each month if not otherwise advised.

VICTORIAN BIOLOGIST.

Mr. C. French, who has for many years been the Victorian Government Entomologist, has been recommended by the Public Service Commissioner to fill the position of Government Biologist, this office having been vacant since Mr. C. C. Brittlebank retired by effluxion of time.

Mr. French's promotion is deservedly popular. He is a capable and painstaking officer, and has won the confidence of the Department and the public by his ability and modesty.

CODLIN MOTH PARASITE.

Victorian Government Will Experiment.

To test the efficiency of the codlin moth parasite, *Trichogramma minutum*, under local conditions, the Victorian Department of Agriculture is bringing in specimens from abroad.

AUSTRALIAN PEAR EXPORT.

Successful Shipment, per "Barrabool," Temperature 29-30 Degrees.

ACCORDING to a report by the Minister of Agriculture for Victoria (Mr. Pennington), from the Victorian Trade Commissioner in London, the shipment of Pears discharged in London by the s.s. "Barrabool" arrived in very good condition. In the report it is stated that the half standard Canadian case makes an excellent package for Pears, and that it is an advantage to have cleats at top and bottom. The suggestion is made that the cases could be wired in pairs so as to make them still stronger.

The following are the prices realised:—

Winter Cole (per case), 13/-, 17/-; Clairgeau, 14/9; Packhams, 15/-, 19/-; B. Bosc, 14/6, 23/-; Cap., 9/3, 18/6; Kieffer, 13/-; Howell, 10/3, 17/-; Vicar, 12/6, 14/-; Jos., 20/-.

Napoleon (per $\frac{1}{2}$ case), 6/-; Marie Louise, 8/-; W. Nelis, 10/-; L'Inconnue, 5/-, 6/-.

Carrying the Pears in the fish chambers of the various boats, it is stated, is a success, as Pears carry better away from Apples, and at a lower temperature, viz.: 29-30 deg. As several lots catch the frost in these chambers, it is suggested that timber with holes here and there be placed against the grids to prevent the frost coming into contact with the outside cases. This may be the means of keeping the outside cases from catching the cold too severely.

Some of the Pears carried in this manner are reported to be arriving in fine condition, and the Commissioner suggests that space be secured quickly by growers for these chambers next season.

ROTARY CULTIVATION.

A New Invention.

The process of rotary cultivation having been advocated by world leaders in agriculture, a new device, known as the Austral Rotary Cultivator, has been invented by Mr. E. J. Thompson, May-street, Hampton, Victoria.

Successful demonstrations have been given in various parts of the State. At Red Cliffs recently there was a large group of interested spectators when this new device worked between vine rows behind a tractor of Mr. Westhead, of Red Cliffs.

The device consists of two wheels on their flat with spokes studded with harrow spikes, the hubs of the wheels coming under a bar coupling them and allowing of various adjustments, including that of a slight tilt of the wheels, allowing of the rotary action.

It is this slight tilt which causes the wheel to revolve and which makes this implement different from the drag harrow. The rotary action also makes the pull much lighter. Users of the implement are enthusiastic as to its general utility. One user states:—

"It is a splendid instrument for breaking down and levelling heavy fallow land, also for the working of lands infested with roots of bracken, couch, etc."

The soil is stated to be brought to a better state of tilth with this new cultivator than under ordinary methods. It is deemed to be very suitable for vineyards, citrus groves, and orchards.

The implement works up close to the butts of the trees or vines. The implement is strong and practical about wearing parts. It is made in sizes to give a 6ft. to 8ft. width in cultivation or when cultivating open fields a series of three can be used, giving a 12ft. sweep. Prices range from £16 to £20. The Austral Rotary Cultivator will cultivate thoroughly to a

H. WILSON

Wholesale Fruit Merchant and
Commission Agent,

56 and 58 WESTERN MARKET,
WILLIAM ST., MELBOURNE.

Branch at Victoria Market.

Late Partner in firm of
G. WOOLF & SONS.

Bankers.—National Bank of
Australasia (Western Branch),
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Tasmanian Apples

Orders for Apples carefully
handled and undertaken for all
Overseas & Interstate Markets.

E. R. COTTIER Pty. Ltd.

88 COLLINS STREET,
HOBART - - TASMANIA

Tel. add. "ERCOT," Hobart.

Consignment shipments solicited
on behalf of leading Fruit
Brokers and Salesmen throughout
England and Continent.

depth of 7 inches. The inventor, Mr. E. J. Thompson, states he is willing to give demonstrations, and would be glad to hear from growers' organisations when demonstrations could be arranged.

A friend is someone who has travelled the road before you and who guides you in your journey.

Insect Pest Control.

Woolly Aphids.

The woolly aphid parasites (*Ap-helinus mali*) should now be placed on trees affected with these aphids. These are obtainable by applying to the Department of Agriculture, Melbourne. The following spray is recommended against woolly aphids, viz.:—

Nicotine sulphate, 1 pint.

Red oil, 1 gallon.

To prepare sufficient mixture to treat 100 trees, 1 lb. of soap should be boiled in one gallon of water till dissolved; add 1 gallon of red oil, and mix thoroughly; then add 1 pint nicotine sulphate, and after mixing the whole for a few minutes, add 80 gallons of water. If the water is hard, a small piece of washing soda should be added. "Volck," or any other light oils, are also recommended.

Cherry Aphids.

These are very destructive to the young fruit spurs of Cherries. Use tobacco sprays, such as nicotine sulphate or black-leaf 40.

Painted Apple Moth.

The hairy caterpillars of these moths are now becoming fairly plentiful on Apple and other fruit trees, and, if not destroyed, will cause a fair amount of damage to fruit spurs. Spray with arsenate of lead, 1 in 25.

Pear-leaf Blister Mite (*Phytoptus*).

These very destructive mites will soon be making their appearance on Pear leaves. The leaves are so affected as to produce reddish or dark brown spots, which become darker with age, and may cover the whole foliage and destroy same. The mites are very minute, and can be seen only with the aid of a microscope. They pass the winter on the trees under the bud scales, and begin to work on the leaves in spring. They cause galls or swellings. Pears and Apples are seriously affected by them. Spray with lime-sulphur, nicotine sulphate, and any of the white spraying oils.

Citrus Thrips.

The adult thrips are orange-yellow in color. They are very minute. They scar the fruit in such a way as to form nearly regular circles around the stem and blossom ends, although these scars may extend almost over the entire surface. Use lime sulphur diluted at the rate of one part to 80 parts water, and tobacco extract (40 per cent. nicotine) diluted one part to eighteen hundred parts of water.

Peach Aphids.

These insects are now becoming numerous. Spray with nicotine sulphate or black-leaf 40; 1 oz. nicotine sulphate makes 5 gallons spray.

AN IMPORTANT CONTRIBUTION TO THE SPRAY INDUSTRY

The New Spreader "FLUXIT"

[Instantly Soluble]

No Fruit Grower can afford to be without "FLUXIT" in his Spray

No spray is the most efficient scientific spray until the spray water is transformed into a colloidal solution. This is accomplished with "FLUXIT." It "Makes every spray a better spray," at the cost of a few pence per tank.

"FLUXIT"— makes a perfect spray, wets thoroughly, spreads uniformly, and clings to the surface.

"FLUXIT"— Makes the standard amounts of arsenate used in sprays, much more efficient to kill.

"FLUXIT"— will give better results with one half pound than the one pound of obsolete spreaders did before, in arsenate sprays.

"FLUXIT"— fluxes the spray material to the sprayed surface. It makes the spray go further.

"FLUXIT"— makes any spray or combination of sprays safer to use.

"FLUXIT"— gives Nicotine, Lime-sulphur, and Bordeaux sprays a thicker film. It wets better and stays longer. It makes the Nicotine Sulphate more efficient to kill.

"FLUXIT"— when used with white (summer) oil and arsenate of lead, in combination, makes a much more effective spray than arsenate of lead alone.

"FLUXIT"— is recommended for use with all white oils.

"FLUXIT"— largely prevents russetting of fruit with Bordeaux sprays.

"FLUXIT"— makes the spray wet as it hits—spread as it wets—and stay where its put.

"FLUXIT"

is a scientific product, prepared from strictly high quality materials, and packed while fresh and keeps in that condition until used. Chemical tests have shown that "FLUXIT" has not deteriorated after 3 years in its original containers.

There is no "FLUXIT" substitute for

"FLUXIT" is not a calcium caseinate. The latter was proved to be deficient three years ago. "FLUXIT" is the only spreader which makes improvement from year to year, and is the result of years of research to make spreader conform to what it should be. A material that will deposit twice the amount of lead and remove it easier than any other spreader or obsolete calcium caseinate. "FLUXIT" is prepared so as to cause every kind of standard spray material to become more efficient.

Manufactured by— COLLOIDAL PRODUCTS CORPORATION, San Francisco, U.S.A.

Australia Agents—

Lawford's Fruit Exchange Pty. Ltd.
DONCASTER, VICTORIA

Growers! Write for Full Information. Agents Wanted in all States where not represented.

Pear and Cherry Slug.

The greenish black slimy larvae of this "Saw Fly" will be making their appearance. Spray trees with arsenate of lead, or dust them with lime, soot, ashes, or dry sand. When fruit is ripening, use Hellebore sprays.

Apple Root Borer.

These beetles are also making their appearance in orchards. When noticed, spray at once with arsenate of lead, 1 in 20. Place zinc bands around trees to prevent them from ascending the trees to deposit their eggs on the leaves. Place root borer traps on trees. Shake branches of tree over piece of old blanket spread on ground, pick up and destroy borers falling on blanket. Keep weeds away from trees.

Rutherglen Bug.

These destructive plant bugs will now be making their appearance. When noticed, use the phenyle spray. This is prepared as follows:—

Take one quart of phenyle, 3 lb. washing soda, 1 bar yellow soap, 40 gallons water. Shred the soap and dissolve it in hot water, to which the other ingredients should be added, and the mixture made up to 40 gallons.

Cutworms.

The caterpillars of cutworm moths are now appearing in orchards in various parts of Victoria, and are causing damage to fruit spurs of Apple and Pear trees. Spray with arsenate of lead, 1 in 25.

Codlin Moth.

The Victorian Department of Agriculture has issued a pamphlet on codlin moth. This gives the life-history of these insects and remedial measures against same. Growers should apply for a copy, which is obtainable free of cost.

THRIPS.

Constant watch should be kept by orchardists for this pest, and spraying when the buds appear will help. Thrips usually appear in the late spring, for they delight in dry, clear heat, and then they may be disregarded, for it is the flowers alone which tempt them, and by that time the fruits have set. But there are certain early dry springs when the thrips and the flowers come together; then, gathering around the loosening buds, they await the unfolding of the petals, and whilst these are still arched protectingly over the heart of the flower, they tear and push their way between the folds, and reach and destroy the stamens, the bearers of the fertilising pollen. The flower, injured in its most vital part, and now without a purpose, perishes, and the fruit

crop is lost. The original invaders are soon reinforced by hosts of young insects, which hatch from the eggs laid beneath the bud scales. These are wingless, and cannot move freely from one tree to another, and are the more greedy in that they must procure their food from the flowers near to which they were born.

The above information is taken from the book entitled "The Care of Deciduous Trees," issued by the manufacturers of Gargoyle spraying oil, who recommend the spraying of this oil one in 20 emulsion sprayed upon the trees when the buds are breaking. This will destroy all eggs and insects that

J. G. MUMFORD

(Established 1906)

Fruit & Vegetable Salesman

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APPLE EXPORTER

"Fruit Exchange,"

449-451 FLINDERS LANEBranches { Western Market
Victoria Markets**MELBOURNE**

Reference—Satisfied Growers in all States

RIDLEY & HOULDING****Covent Garden Market
LONDON**

Specialists in Australian Fruit.

Solicit consignments of Apples, Pears,
Etc.

Our record of over 30 years' standing in the handling of Australian fruit, with satisfactory results, is a recommendation for growers to ship their fruit to our house.

Representatives—

International Fruit & Mercantile
Company Ltd., Melb., Vic., Anstralla.
Murdoch Bros., and A. J. Walshe &
Co., Hobart, Tasmania.

are there, and as its odor is distasteful to the insects, they will not come near for some time.

Life is only froth and bubble,

But there are two things stand like
stone—

Friendship in another's trouble,

Courage is our own.

—Adam Lindsay Gordon.

VINE BLACK SPOT.

Warning to Growers.

The Superintendent of Horticulture, Mr. J. M. Ward, has issued a warning to growers of Sultanias and other susceptible vine sorts of the risk incurred by omitting to swab such vines with acid iron sulphate, before the buds commence to swell in early spring.

Though the fungus was little in evidence during the dry summer months, it developed to some extent last autumn, and in many Sultanias vineyards there are ominous symptoms—sufficient, in fact, to provoke a disaster in the absence of preventive measures, should the coming spring be a wet one.

It should be unnecessary to stress the value of swabbing. The operation is irksome, and therefore unpopular, but all are agreed as to its efficacy in delaying the first appearance of the fungus. The time thus gained is of inestimable value in a bad season.

Though control is possible by copper-containing sprays alone, these must be abundant, early and oft repeated, in a wet spring. The black spot fungus is more tolerant of copper than that of downy mildew. On vines that have been swabbed, subsequent spray control is so much easier as to make the former well worth while.

The usual formula for the swab is:

Iron sulphate, 20 lbs.

Strong sulphuric acid, 8 lbs.

Water, 10 gallons.

The solution is very corrosive, and must be prepared and handled with care. If applied in the form of spray, special pumps are necessary to withstand its action.

For further particulars, growers may consult Bulletin No. 42, Anthracnose or Black Spot of the Vine, obtainable, post free, on application to the Director of Agriculture, Treasury Gardens, Melbourne, C.2.

Developing British Ports.—In a well-written article recently contributed to the "Country Life and Stock and Station Journal," Capt. W. J. Wade, representative in Australia for the Manchester Ship Canal Co., pointed out certain wasteful methods of distribution of Australian produce, particularly in the concentrating of supplies on London, whereas the bulk of the consuming population is in the provinces. The importance of London is recognised, but Capt. Wade insists that due attention is not paid to the ports which serve the main centres of population, and that finally the extra cost involved in distribution is paid by the primary producer.



Codlin Moth

Messrs. William Cooper & Nephews (Australia) Limited—the proprietors of Cooper's famous Sheep Dip—have pleasure in announcing that, as the direct result of special research and a series of practical tests carried out in Australia by their own Scientific Staff of experts, working in collaboration with the officials of the Departments of Agriculture, they are now able to supply orchardists with the most perfect emulsified white Oil for spraying Fruit Trees in leaf.



Whether you require Oil or Arsenate of Lead you cannot do better than buy a standardised

"COOPER" PRODUCT.
For Control of Codlin Moth, orchardists can now obtain Cooper's Arsinette and Cooper's Alboleum, for carrying out their spraying in accordance with the Regulations of the Departments of Agriculture.



Cooper's
Alboleum

Available in
5 gall. Drums
2 gall. Tins

Cooper's Arsinette

Available in 56lb. Cases
and 25lb. Cartons

Obtainable from

N.S.W.—
William Cooper & Nephews (Australia) Limited, Sydney, and Agents.
Victoria—
Cooper Engineering Co. Ltd., Melbourne.
Tasmania—
Bender & Co. Pty. Ltd., Launceston;
A. G. Webster & Sons Ltd., Hobart.

South Australia—
Elder Smith & Co. Ltd., Adelaide.
West Australia—
The Westralian Farmers Ltd., Perth.
Queensland—
Southern Queensland Fruitgrowers' Society, Ltd., Cleveland, Brisbane.

COOPER'S EMULSIFIED AND ARSINETTE WHITE OIL

Clearing Land of Trees and Stumps.

Valuable Labor-saving Devices for the Fruitgrower and Farmer.

Trehwella Bros.' Implements Retain Their Popularity.

JUST as in different countries people assume definite types because of natural surroundings, so, in the realm of power and machinery, implements have to be devised for specific needs. For this reason the Trehwella land clearing implements have won a distinctive place for utility under Australian conditions.

"Wallaby" jacks are those designed for 2½, 4 and 6 ton lifts. These have proved excellent for rolling logs and for clearing land of timber.

Then for the heavier lifts there are the "Monkey" jacks. One size is for an eight-ton lift, and another for ten tons. The former has been proved exceptionally serviceable for grubbing out roots and stumps, while the

other "Monkey" jack, and it has, in addition, a number of improvements.

It frequently happens that the weather is wet when clearing or tree pulling operations are in progress. It is just here where the merit of the "Monkey" grubber is most clearly evidenced—for when the ground is too soft or wet for using a jack or similar implement, the "Monkey" grubber just goes right ahead and performs its work with wonderful efficiency.

Then again, this extremely handy implement can be used as a winch for many purposes.

Some Nice Appreciations.

While the manufacturers explain the outstanding good points of their implements, it is nice to know what the other fellow—the user—thinks of them.

The firm has indeed many appreciations—letters which express gratitude for the utility of the Trehwella implements. Among a big list of appreciations the following, from a fruitgrower, may be ruled as typical.

"I am highly pleased with the 'Monkey' jack. Owing to the almost incessant rain, I only worked it about nine days, and in that time took out about 260 Apple trees, some of which were nearly 30 years old, and over one foot in diameter in the trunk, over with spreading tops."

Visitors to the Melbourne Royal Show will be welcomed to the demonstration that will be given throughout the Show at the firm's stand, 98 Smith-street, Show Grounds.



"Getting the pull" on a big stump with the Trehwella "Monkey" Horse Grubber.

And more, the success of these implements having been demonstrated under Australian conditions their unique value assumed wider significance, so much so that in the widely scattered portions of the globe, Trehwella implements are now being used for the identical purpose for which they were invented in Australia.

It is a noteworthy fact that Trehwella implements are largely used, not only throughout Australia, but also in New Zealand, England, Ireland, Scotland, Europe, U.S.A., Canada, South Africa, the East Indies, and elsewhere.

* * *

A Useful Range.

Trehwella implements are manufactured in several design, from which fruitgrowers, farmers and land workers and contractors may choose.

There are jacks for various lifting operations, also implements for tree pulling and for grubbing out roots. Special grubbers are available for different conditions,

latter seems to be just the size for a multitude of requirements, and so it has come to be known as the King of Grubbing Jacks. This implement embodies all the good features of the



"Out"—the stump shown above, successfully grubbed with the Trehwella Horse Grubber.

MASSEY-HARRIS

Orchard and Vineyard Machines.

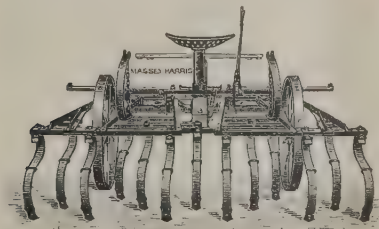
Modern Efficient Labor Saving Implements.

EIGHTY-THREE years' experience in the manufacturing of implements for the farmer and orchardist are behind the complete range of machines that are available from the Massey-Harris Co. There is a Massey-Harris implement for every purpose, and in all cases a special study has been made of the requirements of the user, be he farmer, orchardist, or vigneron.

We outline hereunder a few of the main features of a portion of the Massey-Harris complete line of orchard and vineyard implements.

Nine-Tooth Orchard Cultivator.

This cultivator is useful for vineyard or for ordinary field cultivation.



Nine-Tooth Cultivator.

The steel teeth with reversible points may be set to cultivate behind the wheels. For orchard work, extensions can be furnished, as illustrated, which cultivate under the over-hanging branches of the trees. Pole and trees or forecarriage optional.



Grape and Berry Hoe.

Grape and Berry Hoe.

This is an excellent implement for the cultivation of Grapes, berries, Peaches, Plums, and small trees of all kinds. It can be adjusted to different widths of rows, and the horse hitches to the side of the pole, out of the way of vines and bushes.

Orchard Extension Disc Harrow.

This implement is reversible and covers the roots or not, as you wish. The gangs are interchangeable in



Orchard Disc Harrow.

their position on the frame so as to throw the soil to or from the trees and vines. It is adjustable to different depths of cultivation in the middle or at the ends, by means of gang hinges. The extension arrangement as illustrated allows for cultivation under the trees without injuring the branches. Supplied with 10 or 12 16 inch discs.

Spring-Tooth Lever Harrow.

By means of a lever the teeth can be set to work at different cutting

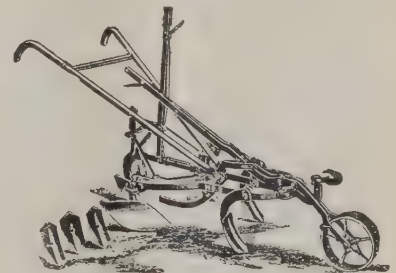


Spring-Tooth Lever Harrow.

angles with relation to the soil. Each tooth is fitted with a reversible point, which gives it double wear.

The No. 2 Scuffler

is a very strong, light, easily handled implement. The handles are adjustable in height, and can be set sideways so that the operator can work close to the row without walking on finished work or scratching his hands on berry branches. Two levers are usually operated to either expand the width or adjust the depth of the Scuffler. Extra equipment consists of furrows of all sizes, weeder blades and sweeps.



No. 2 "Massey Harris" Scuffler.

All the implements outlined above are built from high-grade materials with special attention to the particular requirements of each implement. A complete range of implements for all farm needs is on view at the Massey-Harris Company's show rooms in every State in the Commonwealth and New Zealand. Agents are also established in practically every leading fruit centre throughout Australasia.

A copy of the firm's latest catalogue dealing with the complete range of implements will be gladly sent on request.

American Fruit Crops.

Apples lighter than last Year.

IN U.S.A. the coming crop of Apples, Peaches, Citrus Fruits, Prunes, and Grapes, will probably be below the average of recent years, according to a report just to hand from the "American Fruit-growers' Magazine."

Apples.—In the country as a whole, the Apple crop seems likely to average 10 per cent. less than that of last year, but still substantially larger than the light crop of 1927. The condition of Apples on June 1 was reported as about 67 per cent., compared with 72 last year, and the average of 68 during the previous ten years.

Peaches.—The condition of Peaches on June 1 averaged 55 per cent., compared with 73 per cent. on June 1 last year, and the average of 64 per cent. during the previous ten years. California, the leading producing State, seems likely to have the smallest Peach crop in ten years. The probable production in the United States is estimated at 48,759,000 bushels. This will represent a substantial reduction from the 68,374,000 bushels produced in 1928, but will be a slightly better crop than that of 1927.

Pears.—Reports on the condition of Pears indicate prospects somewhat poorer than usual. In Washington and Oregon, where the number of Pear trees of bearing age has been increasing rapidly, the production may be up to the average of the last few years. California and New York both expect light crops, and elsewhere crop prospects are only fair. June 1 conditions indicate a crop of 20,633,000 bushels, compared with the 23,783,000 bushels harvested last year. The condition of the Pear crop on June 1 was 58.5 per cent., compared with 70 last year and an average of 65.5 during the previous ten years.

Citrus Fruits.—In both California and Florida, the present prospects are decidedly less favorable than on June 1 last year, and the reported condition of all citrus fruits in these States is well below the usual average. Prospects are, however, much more favorable in Texas and Arizona, where the condition of citrus fruits averages about 90 per cent. of normal.

The American Apples, which principally compete with those from

Australia, come from the Pacific Coast States of Oregon and Washington. Reports from these States are as follows:—

Oregon.

The Apple crop will be light this year, probably not over 60 per cent. of last year's crop of 6,480 carloads.

Cooksley & Co.

(W. P. COOKSLEY)

Reliable Fruit Agents

Over 30 Years Experience

TRY THEM!

Fruit Exchange, Brisbane
QUEENSLAND

Shipping No. 29

Reference: Commercial Banking
Co. of Sydney Ltd.

"YARRA" BRAND SPRAYS

PARSONS & JAKES

Manufacturing Chemists

6 Patterson Street }
155 Yarra Street } **Abbotsford, Vic.**

Tasmanian Agents—

N. L. HOPKINS, HOBART

The Rogue River district reports a Pear crop slightly smaller than last year, while in Hood River, Bartlett Pears promise about 50 per cent. of last year's crop. All told, the Pear crop may approximate 2,500,000 bushels. A few contracts have been made for canning Pears at 65 dollars per ton, but growers are not selling freely at that price.

Washington.

The Apple crop is the most spotted and irregular of any in the last

ten years. The Winesap is probably the most evenly set of any variety.

The Pear crop is light, but in good condition. Reports indicate that Bartlett's may go as high as 75 dollars per ton. Other varieties are of secondary importance.

Many men in the co-operative association fear that the Farm Aid Bill recently passed by Congress will hinder more than help their work.

EUROPEAN FRUIT CROP PROSPECTS.

THE outlook at the present time is favorable for a large crop of Apples, Pears, and Plums in England, according to a report from the U.S.A. Bureau of Agricultural Economics in June.

On the Continent, latest reports from fruitgrowing sections indicate a good crop of Pears in 1929 in all of the important producing areas except Czechoslovakia and Germany, according to cabled information from Assistant Agricultural Commissioner O. L. Dawson, at Berlin. A good crop of Apples is expected, also in all of the important producing areas except in Austria and the Italian Tyrol. In Germany the prospects are for a good Apple crop, considerably larger than that of last year. The Pear crop in Germany, however, is expected to be small, due to damage from frost and hail. In Czechoslovakia the Apple crop shows signs of being medium to good, and above that of last year, and Pears medium but somewhat below 1928. The Apple crop in Austria is expected to be below that of last year as the result of considerable frost and insect damage. The Austrian Pear crop, however, is expected to be good. In the Italian Tyrol the Apple crop will be rather small this year, Mr. Dawson reports, due to unsatisfactory setting in important producing areas. Prospects, however, are for a good Pear crop since the frost damage was confined mostly to the low regions. In Switzerland, both Apples and Pears promise good crops, and considerably above those of 1928. Prospects in France are for good crops of Apples and Pears.

-LEMONS-

**We are the largest Buyers
in Australasia**

C. M. BROOKE & SONS

73 Whiteman St., South Melbourne, Vic.

Codlin Moth Control.

Spraying is Essential.

Arsenate of Lead, Properly Applied, is the Grower's Best Friend.

Swift's Retains Its Constant Popularity.

SPRAYING is such a recognised orchard operation that the question is never asked, Do you spray? But, With what do you spray?

The spring season is now with us, and apart from spraying for fungus diseases the big work of spraying to combat the codlin moth demands attention.

At the Cool Stores' Conference held at Melbourne during August, a prominent grower stated that the codlin moth was the worst pest with which the growers had to contend: It was worse than all the other pests combined.

When it comes to a question of efficiency there never has been any doubt as to the efficiency of Swift's arsenate of lead. This pioneer spraying compound was introduced here over 21 years ago, and in the continuous use of the product ever since the quality has never varied.

Growers do not need reminding that Swift's was the first arsenate of lead to be used in Australia. It was a revelation to growers—the use of an arsenical compound with no danger of burning the foliage or harming the developing fruit.

In the years which have passed since its first introduction growers have learned to rely on this splendid spray, which is produced by one of the leading American chemical manufacturers according to their special and tested formula.

All the improvements which have been made possible since Swift's was first made are included in the spraying compound which still finds ready acceptance among Australian and New Zealand orchardists and vignerons.

At a conference of noted American entomologists recently held in U.S.A., the codlin moth came up for consideration.

After a preliminary discussion the Conference framed a resolution in order to find a basis for further discussion. And the first—and basic—resolution then carried was:

"That arsenate of lead is the only known means so far of combating the codlin moth."

In spraying to combat the codlin moth, it is essential that the work be done thoroughly. The first or calyx spray is given just as the petals are falling, applying a second spray within 30 days.

Keen observers point out the desirability of getting rid of as many of the first brood as possible: this is a matter of very great importance, for if the first brood is not properly dealt with there will be greater infestation later.

After the second spray it is necessary to keep a coating of the arsenate of lead on the first as it develops in order to prevent the entry of the voracious grubs.

The point which the manufacturers of Swifts desire to emphasise is the par-excellent quality of this product.

It is recommended that a power sprayer be used, with a fine nozzle, giving a good drenching spray.

All the difference between success and failure lies in the thoroughness with which the work is done.

Orchard sanitation is a factor too often overlooked by many growers. All fallen fruit should be picked up and destroyed by fire or boiling water. Bandaging the trees is compulsory in N.S.W., but not in Victoria. Opinions are divided as to the need for this method, but with regard to spraying all are agreed as to its necessity, and Swift's urge the importance of their product.

Leaf-Eating Insects.

There are other fruit and leaf-eating insects which can be killed by the use of arsenate of lead.

There is the light brown Apple moth, the "native" codlin. This pest becomes particularly active during the autumn, necessitating spraying to keep it in check.

Arsenate of lead has been found of assistance in killing the root borer. These pests ascend the trees and eat the leaves: if the leaves have had a drenching spray with arsenate of lead, root borers can be poisoned in thousands.

Then there is the Pear slug, the Orange moth, the painted Apple moth, various beetles and borers. Arsenate of lead is thus a good friend not only of the orchardist, but also of the citrus grower and vignerons.

In Western Australia, where there is no codlin moth, it is very necessary to spray with arsenate of lead to combat other leaf-eating pests.

Some of the special points claimed for Swift's arsenate of lead are that it keeps in a fine state of suspension, it has good adhesive qualities, it is faithfully compounded by expert chemists, having adequate killing power, yet it will not burn or damage the trees. For these and other reasons Swift's state that their product is really economical to use.

At the Royal Show, Melbourne, supplies may be obtained at the stand of Messrs. D. & W. Chandler Ltd., from whom and from the firm's agents descriptive booklets may be obtained.

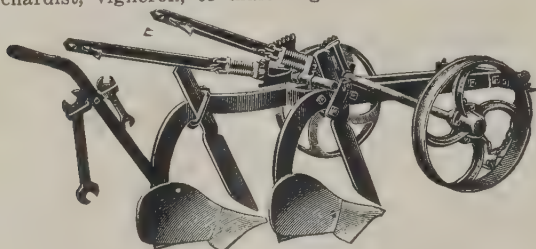
The agents for Swift's arsenate of lead in the several States are as follows:—Rocke, Tompsitt & Co., 292-298 Flinders-street, Melbourne, Victoria; D. & W. Chandler Pty. Ltd., 290 Brunswick-street, Fitzroy, Victoria; E. & W. Hackett Ltd., 73 Rundle-street, Adelaide, South Australia; Harris, Scarfe & Sandovers Ltd., Hay-street, Perth, W.A.; F. W. Heritage & Co., Hobart and Launceston, Tasmania; Anderson & Co., 399 George-street, Sydney, N.S.W.; Australian Drug Co. Ltd., Australia House, Carrington-street, Sydney, N.S.W.; Kleep, Macpherson Ltd., 252 George-street, Sydney, N.S.W.; Taylor's & Elliott's Ltd., Charlotte-street, Brisbane, Queensland.—(Advt.)

Tools for Vineyard, Orchard and Garden

T. Robinson & Co. Pty. Ltd.
Spotswood

Exhibit Interesting Display at Royal Show.

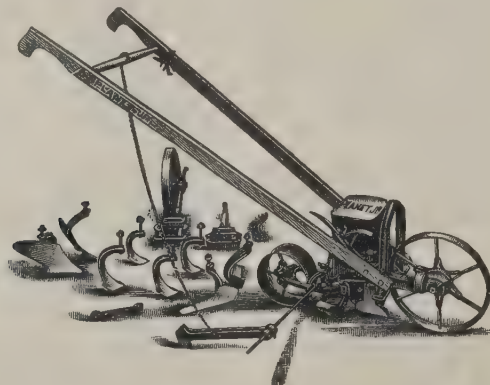
THE experience gained during their 75 years of experience in providing for the man on the land, enables this well-known firm to put forward such a wonderful exhibit of machines and implements which as so eminently suited for the requirements of the orchardist, vigneron, or market gardener.



Double Furrow Mouldboard Orchard Plow.

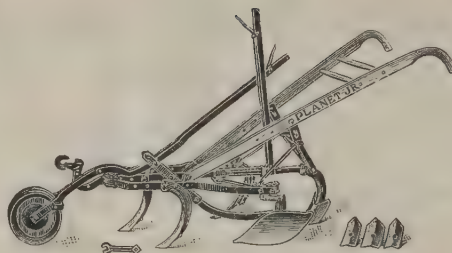
A comprehensive display of single and double furrow plows includes the double furrow illustrated. This implement is splendid for orchards or vineyards, as it will work up to within a few inches of trees or vines.

It is very easily handled in rough ground, and can be turned in its own length. Levers are low-set and operate both land and furrow sides; will turn a furrow 9in. wide up to 6in. deep. Circular pattern coulter can be supplied if desired.



No. 25 Planet Jnr. Hill and Drill Double Wheel Hoe Cultivator and Plow.

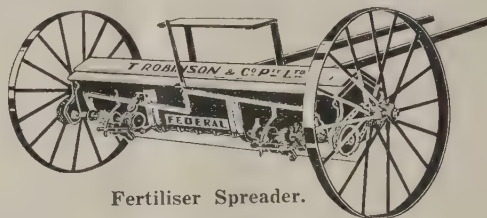
The Planet Jnr. line of tools has been utilised in this State for upwards of half a century, and the increasing demand for these products is evidence of their popularity. In hand tools, the combined seeders, wheel hoes, cultivators, and plows provide equipment which enables users to reduce their production costs to a minimum. These machines are available either as single or double wheel



Planet Jr. No. 8 Horse Hoe and Cultivator.

The one-horse cultivator shown above has been a great favorite for many years. It is the most easily guided, easily handled, and steadiest running horse hoe ever offered.

The pressed steel gauge wheel is a decided improvement; the wheel lever also operates the runner which controls the depth and steadies the machine—adjustment is instant. It is invaluable in cultivating almost every known crop grown in rows. Either wood or steel handles are available; side standards are the swivel type and can be set in any desired position. Any of the wide range of Planet Jr. steels can be adapted to this implement.



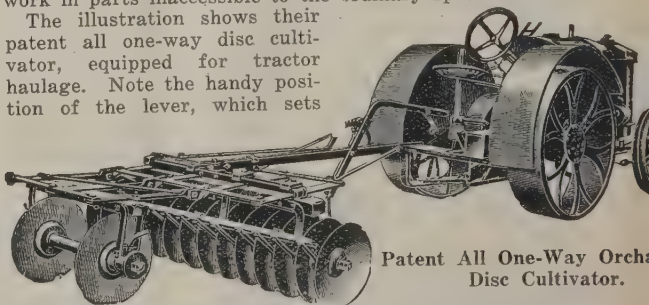
Fertiliser Spreader.

The benefits resulting from top-dressing have previously been stressed, but to accomplish this in a thorough manner the need of a reliable machine is paramount. This company claims that there are more of their machines in use throughout the Commonwealth than any other make.

The Federal wide hopper spreader, with a covering width of 6ft., has been specially made for use in orchards; the wheels are low set for the purpose, and it is a sure, even sower; extra equipment is available for sowing lime in large quantities. The machine is also available in 9ft. and 12ft. widths for large areas.

The broadcast distributor is a self-contained outfit, which has found favor with all classes. Its design enables it to work in parts inaccessible to the ordinary spreader.

The illustration shows their patent all one-way disc cultivator, equipped for tractor haulage. Note the handy position of the lever, which sets



Patent All One-Way Orchard Disc Cultivator.

the discs at the required depth; the frame is double trussed, ensuring great rigidity and strength; it is adjustable for working under trees or for open field cultivation. For horse draft a double wheel forecarriage is included in the equipment. This implement is available in the following sizes: 8, 10, 12, and 14 disc.

South Australia's Irrigation Area.

With Particular Reference to Australian Dried Vine Fruits.

THE PRESENT POSITION and future prospects of the South Australian irrigation settlements were reviewed at Waikerie, S.A., when Mr. H. S. Taylor delivered an address before the Conference of the River Murray branches of the Bureau of Agriculture, in June.

Mr. Taylor, who is a member of the South Australian Advisory Board of Agriculture, said the depression hanging over the irrigation areas, was

Current and Lexia growers were not so fortunate, but on the whole, production costs on dried vine fruits were more than covered on land producing good crops.

There was little prospect of a profitable export trade for the Lexia, but the prospects for the Currant, thanks to the Canadian preference and the stabilisation of the Greek Currant prices in Britain, were encouraging.

The Over-production Problem.

The grave menace that overshadowed the dried vine fruit industry was that of over-production. This serious over-production, for which California was responsible, materialised in 1927-8, with disastrous results, more especially to Californian growers (who were also suffering from lack of organisation), but the repercussions were felt in Australia. Yet, throughout this period Australian Sultanas sold at £20 to £30 a ton more than Californian on the British market. Californian growers received only £12 a ton in the sweat box, in 1927; and £8 in 1928.

It seldom happened that there were good crops simultaneously in all countries. This year Australia had a record crop, while the Californian crop was reduced by one-third through frost.

Last year California had 275,000 tons of Raisins dried, over 300,000 tons if Raisin Grapes were sold fresh, and 60,000 tons were not harvested.

The frost troubles in California were of benefit to Australia. While prices had not markedly advanced, sales had been greatly stimulated. The whole of the 1928 crop of rain-damaged Sultanas had been sold, and the 1929 season opened with no carry-over. In the five weeks ending May 9, sales of Australian Sultanas in London amounted to 7,023 tons, and in the following five weeks sales of 3,223 tons of new season's Australian Currants and Sultanas were recorded. For the eight weeks ending June 6, sales of our dried vine fruits in Great Britain realised £382,460.

The wine industry, after a burst of prosperity due to the export bounty and British preference, had slumped because of a too rapid reduction of the bounty and lack of organisation among the wine makers. Export Marketing Control would be of service, and while the present pros-

pects were not cheering, many responsible leaders refused to be pessimistic.

It had been frequently asserted that dried fruits industry was only kept going by Government assistance. This was not true. With the exception of the very substantial help by the Commonwealth Government to assist growers during the disastrous 1923 and '24 years, the industry had received no direct financial assistance from the Government, except the £ for £ subsidy for advertising in Great Britain, and this assistance was open to other industries. The experience of the control organisations, State and Federal, were met by the growers themselves.

Assistance might be required, however, as world plantings could yield

Ship Your Oranges, Lemons, Grapes to New Zealand



All consignments for this market will have careful attention and realize highest prices if sent to

**The Co-operative
Fruitgrowers of Otago
Limited, Dunedin**

Personal supervision of every consignment.

Cheques posted promptly.

Drop us a Line or Cable
"Peachbloom," Dunedin.

lifting; among other factors, two had yielded big benefits: (1) the dried fruits control system, and (2) the bounty on the export of sweet wine.

The principal industries of the Murray irrigation areas in South Australia, were dried fruits and wine and distillery Grapes. These were faced with difficult world conditions, and the future was uncertain. For the main dried vine fruit crop—the Sultana—the prices immediately before 1925 were disastrously low; but the effect of control, the production of fruit with the color desired in British markets, and substantial British preference, had yielded prices which placed the Sultana grower in the relatively fortunate position of one of the few primary producers whose product brought more than production cost.

SUPPORT CO-OPERATION

By Consigning your
FRUIT to the

**Producers'
Distributing
Society Ltd.**

(Late Coastal Farmers' Co-operative
Society Ltd.)

— Agents for —

"BLACK LEAF 40"
and all Orchard Requirements

**Melbourne Sydney
Newcastle Hobart
Launceston Devonport**

a crop of 600,000 tons, against a world consumption of 460,000 tons.

Some Big Figures.

The 1929 Australian dried vine fruit crop would probably exceed 70,000 tons, of which 60,000 tons would be exported, and the probable price would be about £45 a ton, or a gross value of £2,750,000 for the export quota (or in other words, more than half the value of South Australia's wheat crop for 1927-8). The total value of the Australian Dried Fruit crop this year would be over £3,500,000.

"In the district with 20 miles of Mildura," continued Mr. Taylor, "it is calculated that less than 40,000 acres of irrigated land will this year yield produce of a total value of about two and a-half millions. The

Mildura run, before its occupation by the Chaffey's, was calculated to have a carrying capacity of 30 acres to the sheep, and it would probably be a very liberal estimate that, allowing for all possible improvement of the land, but without irrigation, the utmost this 40,000 acres could be expected to carry as a pastoral proposition would be 8,000 sheep. Utilised for dry farming, on a unit basis of 1,000 acres, which experience has already shown to be an inadequate area, it might provide support for 40 farmers and their families, or for 20 farmers and their families on a 2,000-acre unit basis, instead of the 20,000 souls it carries at present.

"The production of the South Australian river fruit settlements, from an irrigated area of about 26,000 acres, will be over 17,000 tons of dried vine fruits, over 30,000 tons of wine Grapes, and not less than 200,000 cases of Oranges, in addition to a considerable tonnage of dried tree fruits and Pears. Allowing for a return of only £5 a ton for wine Grapes and a gross average price of 13/6 a case for Oranges, this should give a gross return of approximately a million and a quarter from these 26,000 acres.

"No other section of producers can show returns of anything like proportionately equal value to the Commonwealth, and if the time should unhappily come when the producers of these irrigation areas are in urgent need of Commonwealth assistance, facts of this nature should constitute a strong case in favor of their claim."

What of the Future?

Despite the big figures just quoted, growers had not been having a rosy time, nor could it be claimed that the industry was in a position of assured stability.

In common with other industries, economic factors were present, and it was necessary to reduce the cost of production.

The lecturer advocated a greater diversity of planting, and the creation of a body analogous to the River Murray Commission to exercise a directive influence over the general of trend of planting.

Growers were earnestly endeavoring to reduce costs by increasing the yield per acre and to produce the quality of fruit desired in Great Britain.

Diversified Farming.

No natural disaster, such as frosts, heatwaves, etc., had equally affected all fruits. Hence two fundamentals for stability were desirable: (1) a wise diversity of production; and (2)

the reduction as far as possible, consistent with efficiency in the production of his main crops, of the grower's dependence on his market sales.

To this end he urged the growing of farm crops for horses and stock, keeping a cow, pigs, and poultry, and the growing of vegetables. A man could thus save about £200 a year. For these purposes an increase in the size of the holdings would be necessary. New South Wales had tackled this problem for both soldier and civilian settlers by establishing "home maintenance areas" on the Murrumbidgee Irrigation Areas, and Victoria had lately adopted the principle for its soldier settlers in both irrigation and dry farming areas. A similar policy might be found necessary in South Australia.

Some Up-to-date Improvements.

"In concluding this review," stated Mr. Taylor, "mention might be made

T. STOTT & SONS
Fruit Merchants
 Established 1882

A Trial Consignment solicited from Growers in all States.

Prompt Settlement.

**11 WESTERN MARKET,
 Melbourne**

of several outstanding factors of recent development that promise to contribute materially to improvement in the quantity or quality of our dried fruit production. Tractor power and tractor implements are notably increasing production in certain of our soils; the invention of the "Little" dehydrator has provided a valuable means of insurance against bad drying weather in the form of a cheap, cheaply worked, and efficient 'finishing off' plant, the possibilities of which are not yet sufficiently realised; and the process devised by Mr. Showell, who has also patented a very efficient blending machine for dried vine fruits, for the protection of dried fruits

against insect infestation

gives every promise of overcoming a frequent and fruitful cause of loss to the dried fruits industry.

"Mr. Showell's process has so far stood every test, and it is gratifying to know that the objections till recently raised against it by the health authorities, on account of the presence of paraffin oil in the protective emulsion, have now been waived. Under arrangement with the A.D.F.A., Mr. Showell has treated 200 tons of Sultanas, as well as Currants, at Mildura this year, and shipments of the treated product are being made to Great Britain and Canada. The time will probably come when all our fruit will be similarly treated, to the great advantage of grower, distributor, and consumer."

RIVER MURRAY PRUNING COMPETITIONS.

PRUNING COMPETITIONS have been successfully carried out in the River Murray districts by the Agricultural Bureau of South Australia.

The championship of the 1929 series was held at Waikerie, on June 19, when an interested audience gathered at Mr. L. W. Andrews' property. The District Horticultural Instructor, Mr. E. Leishman, acted as judge, together with two consultative judges—Messrs. L. Chapple (Berri), and F. Dunstone (Waikerie).

In the fruit tree section there were nine entrants, and the work was of high quality as but few points separated the contestants. The winner was Mr. G. Miller (Waikerie), with 264 points, closely followed by J. Virgo (Waikerie), with 261 points; J. Fox (Berri), was third with 258. Other competitors were Messrs. E. Rout (Berri), S. Sanders (Moorook), A. Wedd (Mypolonga), R. Isaacson (Waikerie), M. Pethie (Renmark), and F. Battams (Moorook).

In the vine section, Mr. J. Virgo was the winner with 266 points, S. Sanders being second with 261 points, followed by W. Perry (Waikerie), 258 points. In this section the pruning by competitors was meritorious, and all scored heavily. The others competing were Messrs. L. Darrington (Renmark), H. Perkins (Berri), A. E. Liddicoat (Moorook), M. Pethie (Renmark), J. R. Dalton (Renmark), A. R. Isaacson (Waikerie), A. Wedd (Mypolonga), R. K. Coxell (Codell), W. Harris (Berri), F. Battams (Moorook).

Messrs. Gibbs, Bright, & Co. donated "Cloudform" dust to the value of £10/10/- to be distributed among the first, second, and third competitors in the vine section.

More Effective Spraying

Spraying admits neither of delay or carelessness, for upon its timely and thorough execution the season's profits depend. There is a critical time at which diseases and pests can be thoroughly controlled; if this is missed, care, labor and prodigal expense can only partly repair the damage. The weather in spraying time is notoriously uncertain; day after day may pass during which the pumps must lie idle, for high winds make the work difficult and uncertain, whilst wet trees both reduce the effectiveness of the sprays, and often make them dangerous to young foliage and fruit.

A BIG FACTOR IN EFFICIENCY is the CHOICE of the RIGHT PUMP

The 604 Motor Sprayer

is the product of careful study, and many seasons' trials. It can rightly be called "Simplicity," for the parts are few, and all are immediately accessible. If there should be a stoppage, the valves can be examined and cleaned, or the "Reversible Seats" turned in a moment.

The Porcelain-lined Cylinder gives long life, as it resists the action of the acids and the wear and tear of grit in mixtures used.

The pump is single acting, and therefore requires no special packing on the piston, but employs a pump bucket, which is replaceable with a new bucket in less than five minutes. The bugbear of leaking glands and pistons does not exist. Cloggy substances in the pump can be blown out by opening a cock at the bottom. The Flexible Suction Pipe can be taken out and examined while the pump is running, and the strainer cleaned if necessary. Thus all ordinary working stoppages can be readily righted.

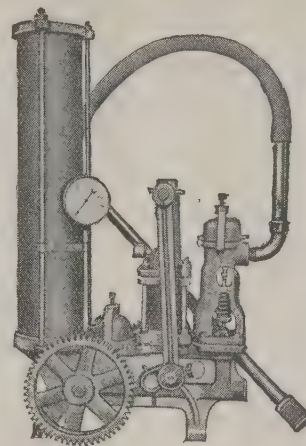
However, the worst form of annoyance to the Orchardist with his Spray Plant is the blowing out of hoses, a frequent happening with ordinary motor pumps when one of the nozzles is suddenly shut off or blocked up. In the 604 "Bean" Pump this is provided for by a special "Pressure Regulator."

The "Bean" Pressure Regulator enables the pump to maintain a pressure up to 300 lbs., even when your guns or nozzles are shut off, whilst you may be driving from tree to tree, or for any other reason. This enables you to have your full pressure instantly when you are ready to spray, and there is no possibility of the spray blowing up because the relief valve stuck and would not work.

This is absolutely impossible with the "Bean" Spray, because the "Bean" Regulator lets the pump and engine run idle under the above conditions.

It saves wear and tear on your pump and engine, and yet your required pressure is always ready.

Engine and Pump are the product of mass production, and every part can quickly be replaced without the services of a skilled mechanic.



Now for the Right Sprays and the Right Ways

Let us deal with right ways first:—

Our recommendations are the result of severe tests and painstaking research, and are given with the assurance that their observance will give the best results.

Dual Purpose Spray (Two Sprays in One)

Amongst these is one which promises relief from much of the anxiety of uncertain seasons, with their minimum of suitable spraying days. It is the use of a combined spray which, in one operation, will control certain insects and diseases. Thus it has been found that the best time for the first application of a fungicide to check Black Spot of the Apple, is at the moment when the cluster buds are preparing to burst. This is also the best time to spray for such insects as Red Spider, Woolly Aphis and Scales. A combined spray means, therefore, full effectiveness and a big saving of labor, for we are assured that neither of the combined sprays—"Maccol" and "C.C.S."—lose any of their distinctive qualities when thus brought together. The same Dual Purpose Spray can be used on all classes of fruit trees, and on vines it takes the place of the disagreeable and severe swabbing with Sulphuric Acid and Iron Sulphate.

The Range of Sprays Recommended by Us

This embraces, among others, the following, which are noted for their reliability:—

Orchard Brand Arsenate of Lead.
Dritomic Powder.

"Maccol" No. 1 and 2 (Dependable Oil Sprays).
Mac's Lime Sulphur.

Our Expert in Sprays and Spraying Materials is ready to advise and assist.

A. H. McDONALD & COMPANY Pty. Ltd.

Showrooms), 570-4 Bridge Road, RICHMOND.
and Works), 12 Minutes from City.—Take Flinders St.
Tram.

N.S.W. Address—25 Clarence Street, SYDNEY.

S.A. Address—134 Waymouth Street, ADELAIDE.

Can You Afford to Choose the Best.

HOW FREQUENTLY we come up against the expression, "I can't afford it." What do we really mean when we use it? Does it refer only to the actual money involved in a transaction, or is there something more than that?

A man knows he should have a holiday, but "he can't afford it," or he needs a new suit or a better machine to assist him in his work. Because "he can't afford it" he does not take the needed holiday, and later, broken health and perhaps a long doctor's bill force him to the conclusion that the holiday would have been the wisest course. He buys a low-priced suit, knowing that the higher-priced one is much better quality, has a far better cut, will last twice as long, and will, to the end, give him a well-dressed appearance, but because the price is higher "he can't afford it."

Continuing the same policy, the machine he needs, and should have, is a little higher in price than one of a similar make. By counting only the initial cost, he decides to make the lower-priced machine do for the time being, and does not get the efficiency he hoped for. He just gets along a shade better than before he bought it. Eventually he sees that he has made

a mistake, and puts the machine on one side, losing the money he paid for it, and buys the one he should have had in the beginning.

Have you not often seen this, and yet so few of us profit by the other man's experience.

Slowly but surely fruit regulations are being tightened up. We all know them—fruit must not be topped—it must be packed with a certain number in the case—fruit of one quality only must be packed in each case—scabby or dirty fruit must not be sent on to the market—bruised or damaged fruit will have no sale. So there it is, and how is the orchardist to comply with all this? At first he is inclined to say, "I can't afford to carry out these regulations. It will cost me more than the fruit is worth." It may seem hard, but it really is not so. Machinery which will help him has been available for some years.

But before he buys he must be sure it is the right machinery. He has to consider whether it will work efficiently, whether it will damage his fruit in any way, whether it will speed up operations and whether its maintenance cost is great or small. When he is sure of this, then there is no question of its value to him. The actual money he pays for it, sinks into insignificance in comparison to its value on the orchard as the right machine.

Taking up the matter of fruit sizers, some growers have said, "I will buy a 'Lightning' sizer when I can afford it. I know it is the best for my purpose." Then they wonder why their neighbor, who uses a "Lightning," has a better name for fruit and gets higher prices than they do.

During one of the sessions of the Fruitgrowers' Cool Stores' Association held in Melbourne during August, Dr. Young, of the Melbourne University, said that one of the major losses of stored fruit was damage in handling. This should not be so. There should be no loss from handling nowadays. The "Lightning" sizers have been built to obviate all this, and a man who uses a "Lightning" will not have this cause for complaint, if he makes his pickers take reasonable care in picking.

A man once said of a certain article, "I know it is good, the advertisement says so." Everybody knows that the "Lightning" fruit graders are good, and many know that they are the best—not only because the advertisement says so, but because of staunch friends everywhere. Staunch because it is the right machine, and more than worth any money that is paid for it. The question in the near future will not be "I can't afford it," but—"I can't afford to be without a 'Lightning.'" "To choose the best is wisdom."—(Advt.)

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THE AGRICULTURAL BUREAU OF SOUTH AUSTRALIA.

Conference of River Murray Branches.

THE Annual Conference of Branches of the Agricultural Bureau in the Irrigation Districts of the River Murray was held at Waikerie on Wednesday, June 20. The Department of Agriculture was represented by Messrs. P. H. Jones (Chairman) and H. S. Taylor (member of the Advisory Board of Agriculture), Prof. A. J. Perkins (Director of Agriculture), G. Quinn (Chief Horticultural Instructor), W. J. Spafford (Deputy Director of Agriculture), H. B. Barlow (Chief Dairy Instructor), A. Robin, B.V.Sc. (Government Veterinary Officer), R. L. Griffiths (District Agricultural Instructor), N. Fotheringham (Manager Berri Experimental Orchard), E. Leishman and H. Beriman (District Horticultural Instructors), H. C. Pritchard (General Secretary), and F. C. Richards (Assistant Secretary Agricultural Bureau).

Mr. A. R. Isaacson (Waikerie) presided at the Conference, and the opening address was delivered by Mr. H. S. Taylor (member of the Advisory Board of Agriculture).

The following papers were read and discussed:—"Pigkeeping as a Side Line on an Irrigation Block," Mr. L. Darrington (Renmark); "The Marketing of Citrus," Mr. F. Metters (Waikerie); "The Marketing Problems of Australia's Primary Products, as Seen by the Economic Commission," Mr. E. M. Rowe (Waikerie); "Soil Moisture," Mr. O. Weste (Renmark); "Random Reflections of the Dried Fruit Industry," Dr. G. Nicol (Waikerie); "The Manuring of Citrus," Mr. N. Fotheringham (Manager of the Berri Orchard).

During the session devoted to Free Parliament various questions were answered by officers of the Department of Agriculture, and the following resolutions were carried:—(a) That the 1930 Conference be held at Berri. (b) That a citricultural expert be appointed for the River Murray districts. (c) That this Conference moves that it be recommended to the State Dried Fruits Board that carton samples of good quality dried fruit be sold at the Royal Show. (d) That this Conference urges the State Dried Fruits Board to consider the advisability of making it compulsory for all dried fruit to be treated with some process, such as that of Mr. H. Showell, to ensure its immunity from fruit grub infestation. (e) That the question of applying sulphur to the

soil be fully investigated. (f) That the Department of Agriculture be requested to stage a permanent departmental exhibit, with demonstrations by departmental officers, at the principal agricultural shows throughout the country. (g) That prior to next year's executive meeting in connection with the 1930 Pruning Competition, branches of the Bureau be asked to discuss the question of allotting points for time.

At the evening session Mr. G. Quinn (Chief Horticultural Instructor) gave an instructive address, "The Sulphuring of Fruit."—S.A. "Journal of Agriculture."

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SOUTH AUSTRALIA.

Advisory Board of Agriculture.

AT the meeting of the South Australian Advisory Board of Agriculture, held on June 26, Mr. P. H. Jones presiding, several matters relating to the fruit industry were discussed.

Resolutions from the Conference of the River Murray branches were dealt with, as follows:—

(1) "That it be recommended to

the State Dried Fruits Board that carton samples of good quality dried fruit be sold at the Royal Show." It was decided to transmit the resolution to the Dried Fruits Board.

(2) "That this Conference urge the State Dried Fruits Board to consider the advisability of making it compulsory for all dried fruit to be treated with some process, such as that of Mr. H. Showell, to ensure its immunity from fruit grub infestation." On the motion of Mr. Taylor, it was decided to forward the resolution to the Dried Fruits Board and to point out that, whilst the Board was not prepared to endorse the reference to compulsion, it was decided to request the Dried Fruits Board to give special encouragement to growers to keep the fruit free from grub infestation.

(3) "That the question of applying sulphur to the soil be fully investigated." It was decided to refer the resolution to the Chief Horticultural Instructor, requesting that tests on applying sulphur to the soil might be included in the general experiments being conducted at the Berri Orchard, and also to forward a copy of the resolution to Professor Prescott, of the Waite Institute, who may be interested in the subject.

(4) "That the Department of Agriculture be requested to stage a permanent departmental exhibit, with demonstrations by departmental officers, at the principal agricultural shows throughout the State." It was decided to forward the resolution to the Minister of Agriculture with the recommendation of the Board.

(5) Allotment of points at River Murray Pruning Competitions.—"That prior to next year's executive meeting in connection with the 1930 pruning competitions, branches of the Bureau be asked to discuss the question of allotting points for time." The Secretary was instructed to bring the resolution under the notice of the branches concerned.

(6) "That the Government be again requested to appoint a citriculturist for the River Murray districts." It was decided to transmit the resolution to the Minister of Agriculture, and to draw attention to a previous request of the Board that increased facilities might be provided for the Berri Orchard to enable citrus investigational work to be carried out. It was also decided to draw the Minister's attention to the fact that, whilst the area under citrus along the Murray valley was less than half of that actually under citrus in the State, on the basis of production the river crops represented considerably more than half of that derived from the State.

Cool Storage Improvements.

Electric Control Apparatus Now Available.

CONSTANT IMPROVEMENTS are being adopted in construction and equipment of cool stores for fruit. Messrs. R. Werner & Co. Pty. Ltd., 54/86 Burnley-street, Richmond, Vic., who have installed the greater part of Victoria's fruit storage, are now offering plants automatically controlled by electric power.

WHERE ELECTRIC POWER is available the man who wants to store a few thousand cases may have an automatically controlled plant if he so desires. A little instrument called the thermostat watches over the temperature, starting up the machinery when the high limit is reached and stopping it at the low limit. A variation of about 3 degrees is usual, and once set the chamber will be held at the desired temperature, operating no more and no less than is required, according to the weather. An occasional drop of oil is all that is wanted, and the busy orchardist may find more time available for multifarious duties.

Although the temperature variation in general fruit storage has hitherto been considered fairly elastic, as a fairly wide range of air temperature does not necessarily mean the same variation in the centre of the fruit stack, it would undoubtedly be an advantage to have an almost unvarying temperature all the time. Automatic refrigeration will give this result. Modern automatic plants, proved beyond the experimental stages in other lines of food storage, are now available for the fruitgrower, at very little extra cost over the hand-operated job. With the ever-extending use of electric power in industry, the near future will undoubtedly find small growers and fruit merchants operating two or three thousand case stores on their own property, so eliminating much waste time and cartage, in addition to having the fruit under their personal control all the time. Automatic plants in conjunction with the improved corkboard insulation will tend towards lower costs per case per season for storage and by more exact and even regulation of temperature relieve the cool storage of any blame for the condition of fruit as it comes out of the chamber, and it is quite possible that cases of carefully selected fruit of good storing varieties may need no examination during the entire storage season.

Concrete and Cork.

An important feature in cool store construction which must ultimately attract the attention of cool storage pro-

prietors is the use of concrete structures, insulated with the necessary thickness of corkboard. This combination, of course, is almost universal in some form or other in cool stores abroad, and is slowly, but surely, being adopted in Australia.

The points of merit in favor of such materials as concrete or brick for the exterior of any building erected as a lifetime investment brook no argument. Certainly first cost is higher, but not so much to warrant passing by without thorough investigation, especially where suitable sand and stone for concrete are available.

The interest on the extra cost of this part of a cool store is well set off by the elimination of periodical painting, except window frames and doors, and the lower rate of insurance premiums alone is quite an item. This matter draws attention to something of grave importance to the majority of cool stores, and situated as most of them are, far from a good water supply, it could almost be said that a concrete or brick building with iron, or tiled roof, was fireproof. Corkboard as an insulation is now the world's standard. Composed of small pieces of cork wood, pressed into slabs 3ft. by 1ft. by one, two, three and sometimes four inches thick, and baked while under such pressure, the natural gum in the cork binds the fractions together. Good corkboard does not burn; it needs some other combustible materials to burn it. One of the tests as to its quality is a fire resistance one. Boards of different brands are tested over a gas burner for a given time, and the results recorded. Other tests apart from actual insulating value are for moisture absorption, by soaking in water even-sized samples for a long period of time and noting the increase in weight. A most important test is for disinfection, tested by boiling the samples.

From the above it is apparent that good cork should be, and is, as well as being the world's best commercial insulating material, fire retardant, free from capillary attraction or moisture absorption, and not likely to go to pieces.

Much more could be said about corkboard, but space does not permit, except to state that the price per square foot on the present day's market is reasonable. The slabs of cork are fixed to the brick or concrete walls with Portland cement or bitumastic preparations, as the architect may recommend, and finally finished off with smooth cement plaster, or, where appearance is not of importance, one of the new asphaltic emulsions are sprayed on, giving good protection for the corkboard.

Floors, of course, are concreted over of a thickness according to the use to which the chamber will be applied.

One of the recent Victorian examples of modern construction on the above lines is the cool store at the Ardmona Canneries. External walls are all reinforced concrete with heavy piers under the roof principals. The floor is not built up to platform height as usual, as the fruit comes in in large batches, and is handled on roller conveyors. A layer of concrete is placed directly on the earth, then corkboard in bitumen, then concrete as a wearing surface. The entire ceiling and inter-dividing walls are of orthodox wood and buzzer chip construction. Protected by its concrete outer walls and iron roof, the insurance in this case is very light, compared with an all-wooden structure. Cost of construction is estimated to be about 10 per cent. more than an all-wooden job. Where platform height is desired the extra cost may be up to 15 per cent.

Prospective builders of cool stores will do well to consider brick or concrete with cork insulation.

* * *

Messrs. R. Werner & Co. Pty. Ltd. have for many years past specialised in supplying machinery for fruit cool storage and in doing so have earned the appreciation of producers.

The firm is willing to supply information to all interested. Enquiries can be made by correspondence, by personal call at their works at Burnley, Vic., or at their stand at the Royal Show, Melbourne.—(Adv.)

South Australian Fruit Marketing Association

Export Matters Discussed—"Dead" Freight—Export Grading
Regulations—Standard Packs.

THE monthly meeting, of the Executive Committee of South Australian Fruit Marketing Association was held on August 12. Owing probably to alteration of date, the attendance was below average. The number of financial members

transport problems. Matter deferred.

The request from A.O.T. Association for support from S.A.F.M.A. in their recommendation for Amendment of Industries Preservation Act to enable contracts to be made with Conference Shipping Companies was debated. It was suggested that, as this may affect shipments of fruit being made to other than main European ports, further information was required before making a decision.

"Dead" Freight.—A request was received from the Overseas Shipping Representatives' Association, asking if the Association could guarantee payment of "dead" freight. It was decided that this could not be done, but the Association would be pleased to assist the Overseas Association by supplying statistics and information re Apple crop, etc., which should help to minimise the possibility of "dead" freight.

The Chairman, Mr. H. J. Bishop, reported that during recent visit to Melbourne, he had attended a growers' meeting at Croydon (Vic.), where the nucleus of a branch of Victorian F.M. Association was formed, and that from reports generally matters were progressing satisfactory with the Victorian Association.

Interview with Hon. T. Paterson.—The Chairman also advised having been granted an interview with the Hon. T. Paterson, Minister of Markets, when he assured the Minister that the S.A.F.M.A. could claim to be truly representative of growers' exporters of Apples and Pears in S.A. The Minister especially desired that members particularly pay attention to damage to markets overseas caused by shipment of immature fruit, and requested that this matter have the Association's most careful consideration. He would appreciate advice of any decisions arrived at after deliberation.

The suggested alteration of export grades, and respecting exclusion of plain grade was discussed—as was also the substitution of number of contents instead of size. The Minister expressed his willingness to advise the S.A. F.M.A. Secretary of matters of importance to the industry. This must be very much appreciated by all members.

Meeting resolved that next meeting be held on September 2, at 2.30 p.m.

Resolved that growers' section of committee be asked to attend at New Market Board Room at 11 a.m. on the same date, and that Chief Fruit Expert (Mr. G. Quinn), Chief Fruit Inspector, be invited to discuss best methods for one standard export pack, with view of making recommendations to all exporting. It is believed that such would greatly assist the industry.

The shipping section was likewise requested to meanwhile give consideration to details of methods and distribution of shipping, and report to next meeting.

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of the Association has now increased to 176, representing total export of 250,000 cases out of the 435,000 exported 1928 season.

Letter was received from Mr. B. C. Criswick, of Sydney (Australian representative of London & North-Eastern Railways), requesting that he be accepted as a member of the S.A.F.M.A.

Shipping Matters.—A request was received from Committee of Australian Overseas Transport Association for financial assistance toward defraying costs of their enquiry into

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The Committee wish to again extend a welcome to any member or delegate of S.A.F.M.A. to attend committee meetings held at Secretary's office (Mr. E. W. Mills), Brookman Buildings, at 2.30 p.m. on the first Monday of each month.

South Australian citrus growers are urging the appointment of a Citriculturist.

SOUTH AUSTRALIA.

Moorook, River Murray (August 13, 1929).

AT the time of writing, the first steady rain for many months has just set in. With something over an inch having fallen since January last, the countryside hereabouts is just a desert of moving sand. No grass and no crops, which has meant the sacrifice of all weak and old stock.

On the irrigated portions, the blockers have had to face special waterings, and have arranged to open the general irrigating season much earlier than usual.

With the absence of nourishing winter rains, the prospects point to very light crops of fruit next season, and the older growers have been careful not to give their vines and trees too much to do—thus maintaining quality.

In another month or so the first sprayings will be carried out—mainly preventive of leaf-curl on Peaches and codlin sprays.

Spraying or Dusting.

Opinion and practice are equally divided between wet spray and the duster gun; both appear to answer the purpose. The writer has used the various dusts for the past five years, and finds them effective, whilst the saving in time and labor is considerable. For the very best results, however, it is considered that the dust should be applied before breakfast in the morning, that being the calmest time of the day, and full advantage is taken of the dews.

Pruning is very much further ahead this year than ever previously at this time—very few blocks in this area not being completed.

Unfortunately, little or no ploughing has been done, owing to the hard, packed nature of the soil, due to lack of rain.

It is considered that the first ploughing of the year should be done immediately after the last watering if pos-

sible, and certainly not later than March or April. This opens up the soil ready for such rain as might happen along, giving much greater absorption. The winter or spring ploughing is then far easier to negotiate. Unfortunately, the foregoing is not the general practice.

DRIED FRUITS.

During the week ending August 15, 635 tons of Australian dried fruits were sold in Great Britain, representing a value of £27,950. Of this quantity, 380 tons of Currants averaged £43/13/10 per ton, and 234 tons Sultanias averaged £45/7/6 per ton.

The total quantity of Australian dried fruits sold in Great Britain ex this season's shipments amounts to 8,794 tons.

PERSONAL.

Mr. H. J. Bishop, President of the South Australian Fruit Marketing Association, called at the "Fruit World" office during August. Mr. Bishop speaks with enthusiasm regarding the South Australian Fruit Marketing Association.

The meeting which launched the movement is stated to be the largest and most representative ever held in South Australia. The linking of growers and commercial exporters in an organisation to improve the industry, states Mr. Bishop, is on sound lines. Much work remains to be done, but he believes the foundations are firmly laid and that the Australian fruit industry will be greatly benefited. By concerted action it should be possible to arrange for the payment of freight at destination.

Growers must view their industry from an all-Australian viewpoint, and at the same time be fully conversant with the methods adopted in countries which are in competition with Australia.

Queensland.

Seasonable Orchard Hints.

SEPTEMBER is the most important month of the year for citrus groves, as the following year's crop of fruit depends, not simply on the blossoming, but that these blossoms should set fruit. Therefore (1) see that there is sufficient soil moisture and (2) ample plant food.

Deep and systematic cultivation is necessary except in seasons of good rainfall, or where sufficient irrigation water is available.

In dry areas stir the soil frequently to prevent loss by surface evaporation. Where irrigation is available, give the trees a thorough soaking. Loss of the following year's crop is frequently caused by the lack of soil moisture at this time of the year.

When the trees show the want of sufficient plant food—a condition that is easily known by the color of the foliage and their weakly growth, the "Queensland Agricultural Journal" advises that the orchard should be manured with a quick-acting, complete manure, such as a mixture of superphosphate, sulphate of ammonia, and sulphate of potash, the plant-foods which are soluble in the water contained in the soil are thus readily taken up by the feeding roots.

The foregoing applies equally well to those in which other fruit trees are grown. Where the land has been prepared for Bananas, planting should take place during the month. If the plantation is to be made on old land, then the soil should have been deeply ploughed and subsoiled and brought into a state of perfect tilth prior to planting. It should also receive a good dressing of a complete manure, so as to provide an ample supply of available plant-food. In the case of new land, which has, as a rule, been scrub that has been recently fallen and burnt off, the first operation is to dig the holes for the suckers at about 12 ft. apart each way. Good holes should be

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(Signed) W. HUME BELL,

Hon. Sec., Swan Hill & Dist. Poultry & Kennel Club, Swan Hill.

"I am writing to congratulate you on issuing the "Australian Poultry World." The August issue was a fine effort, the literary matter and illustrations being excellent.

"Your paper is just the thing the industry has been waiting for, namely, a poultry journal with a "Soul" and backbone, such a paper has been conspicuous by its absence, in Victoria at any rate. I am looking forward with anticipation to your next issue, and am quite sure you will soon have a large circulation of appreciative readers."

(Signed) S. J. MORGAN,

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dug, and they should be deep enough to permit the top of the bulb or corm of the sucker to be 6 in. below the surface of the ground.

Take great care in the selection of the suckers, and see that they are free from beetle borers or other diseases.

As a precaution it is advisable to cut off all old roots and to dip the corms for two hours in a solution of corrosive sublimate, made by dissolving 1 oz. of this substance in 6 gallons of water.

In old Banana plantations keep the ground well worked and free from weeds, and remove all superfluous suckers.

When necessary manure—using a complete fertiliser rich in potash, nitrogen, and phosphoric acid, such as a mixture of meatworks manure and sulphate of potash—1 of the former to 1 of the latter.

Pineapples can also be planted now. The ground should be thoroughly prepared—viz., brought into a state of perfect tilth to a depth of at least 1 ft., more if possible; and when the soil requires feeding, it should be manured with a complete manure, which should, however, contain no superphosphate.

Old plantations should be kept in a good state of tilth and be manured with a complete fertiliser in which the phosphoric acid is in the form of bones, basic phosphate, or finely ground phosphatic rock, but on no account as superphosphate.

The pruning of Custard Apples should be carried out during the month, leaving the work, however, as late in the season as possible, as it is not advisable to encourage an early growth, which often means a production of infertile flowers. If the weather conditions are favorable Passion vines can also be pruned now; as if cut back hard they will make new growth that will bear an autumn crop of fruit instead of one ripening during the summer.

Grape vines will require careful attention from the time the buds start, and they should be regularly and systematically sprayed with Bordeaux mixture from then till the time the fruit is ready to color, in order to prevent loss by downy mildew or anthracnose.

Where leaf-eating beetles, caterpillars, or other insects are present, the trees or plants on which they are feeding should be sprayed with arsenate of lead. All fruit-fly infested fruit must be gathered and destroyed, and on no account be allowed to lie about on the ground, as, if the fly is allowed to breed unchecked at this time of the year, there is very little chance of keeping it in check later in the season.

The Granite Belt, Southern and Central Tablelands.

Where not already completed, the winter spraying with lime-sulphur should be finished as early in the month as possible. Black aphid should be fought wherever it makes its appearance by spraying with a tobacco wash, such as black-leaf 40, as if these very destructive insects are kept well in hand the young growth of flowers, leaves, wood, and fruit will have a chance to develop. Woolly aphid should also be systematically fought wherever present, as once the trees are in leaf it is much more difficult to treat.

The working over of undesirable varieties of fruit trees can be continued. The pruning of Grape vines should be delayed as long as it is safe to do so, as the later the vines are pruned the less chance there is of their young growth being killed by late frosts. Keep the orchards well worked and free from weeds of all kinds, as the latter not only deplete the soil of moisture, but also act as a harbor for many serious pests, such as the Rutherglen bug.

Grape vines should be swabbed with the sulphuric acid solution, when the buds begin to swell and just before they burst, as a protection against black spot and downy mildew.

New vineyards can be set out, and, in order to destroy any fungus spores that may be attached to the cuttings, it is a good plan to dip them in Bordeaux mixture before planting. The land for vines should be well and deeply worked, and the cutting should be planted with one eye only out of the ground and one eye at or near the surface of the ground.

In the warmer parts which are suitable for the growth of citrus fruits, the land must be kept well cultivated, and if the trees need irrigating they should be given a good soaking, to

be followed by cultivation as soon as the land will carry a horse without packing.

In these parts fruit fly should be systematically fought, as it will probably make its appearance in late citrus fruits and Loquats; and if this crop of flies is destroyed, there will be every chance of the early crops of Plums, Peaches, and Apricots escaping without much loss.

QUEENSLAND BANANAS.

Trade Sought With Western Australia.

DESPITE the heavy duty on Bananas designed to protect the Queensland industry, Western Australia has continued to import Bananas from the Near Eastern countries, particularly Java. It is estimated that 1,000 tons are imported annually into Western Australia.

The Queensland growers are endeavoring to secure this trade by sending Bananas to Western Australia via Broken Hill. Last summer two trial consignments were sent by rail from Brisbane to Perth, the Bananas arriving at Perth in good condition, despite the fact that during the journey the shade temperature at some places exceeded 100 degrees.

The Committee of Direction of Fruit Marketing in Queensland is negotiating with the Commonwealth Railways to see if the Banana carrying trade with Western Australia can be increased.

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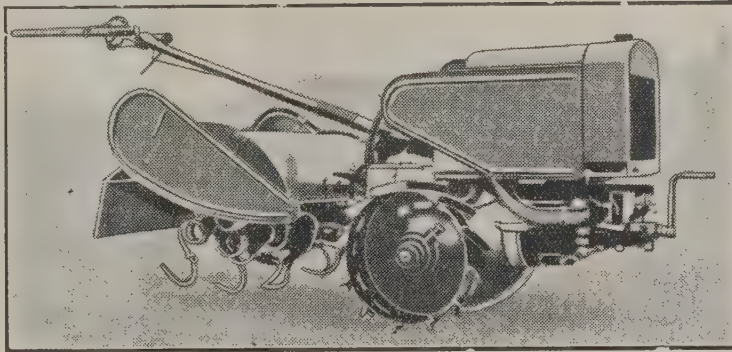
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Turning in a Green Crop, the Fruit Grower will find
this a profitable Implement

SIR JOHN RUSSELL, England's most noted soil expert recommends
it as the most Scientific Method of Cultivation

TWO SIZES.—5 H.P. and 10 H.P.

DEPTH.—From 1 to 12 inches, and not a particle missed.

EASY MANIPULATION, in and out and around trees.

THE TINES ROTATE AND ARE DRIVEN BY THE
ENGINE, not dragged at the back as in other cultivators.

PLOUGHING AND HARROWING IN ONE OPERATION.

THE SIMAR ROTOTILLER must be seen at work to be appreciated

AGENTS WILL GLADLY GIVE YOU A DEMONSTRATION

AGENTS:

VICTORIA:

The Ormond Plant Farm Pty. Ltd.,
Ormond (near Melbourne), Vic.

SOUTH AUSTRALIA:

Messrs. H. & H. J. Kemp,
Cross Roads,
Unley, South Australia.

WESTERN AUSTRALIA:

Messrs. Patterson & Co. Ltd.,
William Street,
Perth, W.A.

NEW SOUTH WALES:

Wm. Taylor,
William Street,
Ermington (near Sydney).

DRIED FRUITS.**Sultana Sales Slow.**

A trade review regarding Australian commodities in England, states (21/8/29):—Trade in Australian Sultanas is very disappointing. Although everything possible is being done to encourage sales there is only a hand-to-mouth demand, and stocks in warehouses on July 31 amounted to 14,236 tons, compared with 6,675 tons a year ago. The "Grocer" (England), states that this piling up of stocks must sooner or later lead to a break in prices, unless those in charge of the fruit are content to see it go out on conditions and in circumstances which it is hardly possible to contemplate.

PRUNE-SELLING CAMPAIGN.**Activity in New South Wales.**

Mr. P. S. Hunt, General Manager of the N.S.W. railway refreshment rooms, has arranged with the Irrigation Co-operative Societies Ltd. for Prune growers to supply "Prune-sweets" in 1 lb. cartons for sale by the railways at 9d. each.

The Prunes have been treated so that they can be eaten straight from the carton, or after 30 minutes' soaking in hot water are ready for table use. The idea is to reduce marketing costs—the fruit being sold straight from the producer through the railways to the consumer. It is considered that the price at which these Prunes are being retailed will make American importations unnecessary.

Price-Cutting Alleged.

Prunegrowers are not unanimous regarding the above-mentioned selling policy. Some members of the Prunegrowers' Association desire the Prunes—quality 40/50 and 50/60—be sold by the Railway Department at 1/- per lb. carton, and that the 60/70 and 70/80 grades be the only ones sold at 9d. per 1lb. carton. The quantity purchased by the Railway Department is about 100 tons, and they are selling the 50/60 quality at 9d. per lb. carton. Certain undercutting is alleged, and the President, Mr. J. M. Dixon, has resigned.

CODLIN MOTH CONTROL.

A combination oil spray for codlin moth control is manufactured by Messrs. William Cooper & Nephews (Australia) Ltd., a firm with an established reputation.

The firm advises that after much research they have succeeded in producing an emulsified white mineral oil, which used in conjunction with their specially prepared arsenate of lead ("Arsinette"), has given remarkable control over the codlin moth. This preparation is called Alboleum. Tests have demonstrated its power for destroying the codlin egg, and at the same time it does not harm tender foliage or fruit.

As the oil has the effect of making the arsenate adhere to the skin of the fruit, it is not desirable to employ a mixed arsenate-oil spray in the later stages of development of the fruit. The maximum is 1/100 part of a grain arsenic per lb. of fruit.

THE HORSE YAWNED.

Farmer: "Why did it take you so long to put the bridle on that horse?"
Farmhand (from the city): "I had to wait until he yawned to get the bit in his mouth."

ALL AUSTRALIAN

The Austral Rotary Cultivator

The Better Cultivating Implement



advance, and is particularly adapted for Close Cultivation Against Vines and Trees, for if the rim of the revolving wheel touches a stem or post, it will just roll off and cause not the slightest injury, instead of striking and scarring and by means of an extension it will cultivate right under foliage, up to picking time.

Price of Two-Horse Cultivator covering 6 feet, £16.
Price of Three-Horse or Tractor covering 8 feet, £20.

AN ENTIRELY NOVEL and improved Method of Cultivation, which saves time and labor, thereby reducing the cost of production, the paramount problem in industry to-day.

It thoroughly Pulverises, Mixes and Levels the soil, reducing it to a very fine tilth, in all sorts of land—open field or orchard—(disc and mouldboard ploughing), and in fallow is invaluable, having no equal for breaking up the soil, and eradicating Bracken Fern, Couch Grass, Sorrel, and all Weeds, and never clogging. For Lucerne Cultivation and Renovation it is unequalled; in Top Dressing it does excellent work; and on hillsides its inclined position is of extreme advantage.

As a Vineyard or Orchard Cultivating Implement the Rotary is a decided advance, for if the rim of the revolving wheel touches a stem or post, it will just roll off and cause not the slightest injury, instead of striking and scarring and by means of an extension it will cultivate right under foliage, up to picking time.

{ Terms can be arranged.

THE AUSTRAL ROTARY CULTIVATOR CO.

May Street, Hampton, Victoria

Stand: Gibbins Farm Implement Co. Royal Show, Melbourne

Fruit Canning Industry.

Admona Cannery Report.

Big Problems Faced.

THE difficulties confronting canning-fruit growers and directors of co-operative canneries, were brought to light at the half-yearly meeting of the Ardmona Cannery shareholders early in August.

That the chief causes were beyond the reasonable control of the directors or management, was the unanimous opinion of the special committee appointed to enquire into the huge loss last year. The loss shown on the balance-sheet was accounted for by the writing down of stocks, decrease in market prices, losses on export sales, and higher working costs, due to the enormous crops produced in the 1927-8 season; 37 per cent. of the pack was put up at overtime rates.

Lacking a can-making plant, the Ardmona cannery was under a serious disability as compared with canneries where can-making machinery was installed.

The directors' report, presented by the chairman, Mr. Victor McNab, stated that the recommendations of the Development and Migration Commission, covering the amalgamation of the Shepparton, Ardmona, Kyabram, and Leeton canneries, were neither practicable, equitable, nor possible under the conditions recommended by the Commission.

An Advisory Committee, however, had been set up to attend to the following:—To fix prices for purchase and sale of both fresh and processed fruits; to define grades, varieties, qualities, and conditions governing these fruits; to arrive at the export quota of each cannery; to arrange, as far as practicable, for the purchase in bulk of all materials and requisites for processing at Ardmona. The company was prepared to meet and discuss any feasible plan for closer

and cheaper working, particularly in the sales and distribution.

Bank interest amounted to a very considerable sum, and this must be reduced before the company could recover its position. Every effort was being made to reduce the manufactured stocks, but there was still intense competition.

The cool store was being operated economically and efficiently: 31,779 cases of fresh fruit had been stored at reasonable rates; pre-cooling was now recognised as an important feature, both for local marketing and for export. Extensions were contemplated. Four additional chambers (to hold 26,000 cases), would cost £8,500.

The quantity of fruits treated for the past season was 4,626 tons, a decrease of 2,853 tons on the 1927-8 season; quality good, increasing the export proportion.

Bounty.—The payment of either 1/- or 1/6 per dozen tins, and the

terms governing same, were wrapped up in the recommendations of the D. and M. Commission; it was evident the Minister for Markets was not prepared to alter the bounty conditions until there was better organisation among the co-operative canneries.

Market Sales and Prices.—There was a much bigger demand abroad, particularly in the United Kingdom and Canada. The damage to the American crops resulted in better prices for the Australian. The demand in Australia was increasing though not quickly enough.

The directors were watching developments in regard to a Peach pitting machine, and in the utilising of waste fruits for fruit juices. Legislators had created uneconomic industrial wages awards.

A medium crop of good quality fruit was better for the grower than a heavy crop of medium quality; for instance 5,000 tons at £10 per ton equals £50,000; 5,555 tons at £9 equals £50,000, and 6,250 tons at £8 equals £50,000. Unquestionably the first-mentioned was best for the grower.

There was a huge carry-over of canned Peaches each year; the best medicine for the whole trade would be a medium crop of good quality

Hamburg Fruit Market

One of the Best Outputs

for

AUSTRALIAN FRUIT

GUSTAV BEY

Fruit Broker & Importer

Fruchthof, Oberhafenstrasse
Hamburg, Germany

Shipping "BEY" Brand

AGENTS:

Victoria: I.F.M. Co., 410-414 Flinders-lane, Melb.

Tasmania: H. Claude Little, Tasma House, 85a Collins St., Hobart.

GENUINE

"BLACK LEAF 40"

(Nicotine Sulphate)

Distributors

The Producers' Co-operative
Distributing Society Ltd.

Melbourne, Sydney, Leeton, Newcastle
Etc.

fruit to give a canned fruit pack of export quality, resulting in a complete clean up of all stocks during 1930.

Growers could, if they would pull together, control and remedy the Cling Peach position in a few years, and thereafter maintain better prices for their fruit by each working to

produce up to a certain definite quantity.

The greater the quantity of fruit produced or processed beyond what could be sold, the greater the loss. This was noticeable in California during the past four years in accordance with the laws of supply and demand.

Canned Peaches in California.

	1926	1927	1928	1929
Cases carried in	463,000	3,837,000	1,346,000	3,500,000
Cases canned	13,654,000	10,829,000	14,811,000	7,000,000
Price per ton (dollars) fruit to growers	40 dol.	22.5 and 25 dols.	20 dol. and 7,100 tons dropped	(Approx.) 60 to 80 dols.
Equal to sterling per long ton (2,240 lb.) . . .	£9/6/8	£5/5/- and £5/16/8	£4/13/4	£14 to £18/13/4

There were yet 10,000 acres of Clings to come into bearing in California. The immediate effect of the recent frosts was that merchants saw their stocks would bear and they commenced to buy heavily.

Prices rose from 1/- to 2/- per dozen in the different grades and the market firmed. Now the growers' associations have met and fixed prices for the canners as follows:—

	Year.	Total Crop in Tons	Total Canned in Tons.	Price per Ton in Dollars.	Value in Dollars.
Pears	1928	200,000	61,500	48	2,952,000
"	1929	145,000	61,500	80	4,920,000
Cling Peaches	1928	414,000	344,000	20	6,880,000
"	1929	not available	156,000	60 or if 80	6,880,000 12,480,000

(70,000 dropped)

(These figures go to prove that the smaller crop was far more valuable.)

Discussing the report, growers strongly expressed the opinion that the over-balancing of the industry had been caused by successive State Governments inducing new settlers to go in for fruitgrowing. There was a moral responsibility resting on the Government to deal out justice

to all growers who had been adversely affected by this policy, and to the co-operative canneries which were carrying more than their share of of this induced over-production.

Commenting on the foregoing, Mr. V. R. McNab states:—

"I am convinced growers should

take steps to work out their own salvation—apart from the bounty question. If growers keep on supplying factories with more fruit than can be sold as canned fruit, then the value of the whole crop is depressed by the knowledge of the few hundred tons—surplus—which each factory fears the other fellow will get cheaply, and so undercut the margin of profit by being able to sell cheaper.

"Next year there should be no worries of surplus production, as prices have risen in England, and the market there looks profitable."

The following sales of Australian canned fruits effected in Great Britain during the week ended August 3, 1929, were as follows:—

	Cases
Peaches (halves)	1,000
Apricots	2,000
Pears	2,000
	5,000

The total sales from the commencement of the season to August 3, are:—

	Cases
Apricots	73,175
Peaches (halves)	81,685
Peaches (sliced)	75,470
Pears	72,645

302,975

Shepparton Cannery. — Extensive additions to the Shepparton cannery are in hand; the warehouse, pulp store, and crude oil store, are to be enlarged, and the railway siding extended.

Kennett Extension Ladders

Wire Bound Safety

18 ft., 40/-

22 ft., 48/-

26 ft., 67/6

Send for Catalogue of Steps and Ladders
Barrows & Garden Seats of all kinds

CHAS. E. KENNETT

City Road & Clarke Street — South Melbourne

BETWEEN QUEENS AND SPENCER STREET BRIDGES.

SHOW STAND NO. 146 GIBB STREET, NEAR DOG PAVILION.

BICKFORD'S "AERO" BRAND ARSENATE OF LEAD



It is not what we think of ourselves, but what others think of us, that counts

What a well-known Victorian orchardist says of "Aero" brand Arsenate of Lead:—

Valley View Orchards,
Pakenham Upper,
April 5th, 1929.

Dear Sirs,—I have much pleasure in stating that I have used your "Aero" brand powdered Arsenate of Lead, for the last seven years, and that the control of codlin moth has been very satisfactory.

This season I sprayed early varieties three times, and late varieties four times, and I confidently state that on the whole 130 acres I did not have more than 5 per cent. of infected fruit.

In future I intend to continue using "Aero" brand Arsenate of Lead, as I consider it the most superior lead on the market for convenient mixing, spreading, suspension, and killing qualities.—Yours faithfully,

(Signed) A. RAMOGE.

"Aero" brand Arsenate of Lead is sold under a definite analytical guarantee. Its high arsenical content, combined with a very low free-arsenic content, place it in the very front rank of Insecticides used in the control of Codlin Moth and other leaf-eating insects.

INTERSTATE AGENTS:

VICTORIA

Ramsay & Treganowan Ltd.,
469, 477 Latrobe Street, Melbourne.

NEW SOUTH WALES

Geo. Ripley & Co.,
Macdonell House, Pitt Street, Sydney.

QUEENSLAND

A. M. BICKFORD & SONS LTD.,
Tank Street, off George St., Brisbane.

WESTERN AUSTRALIA

Felton, Grimwade, & Bickford, Ltd.,
297 Murray Street, Perth.

TASMANIA

Gardner & McKenzie Pty. Ltd.,
64 Cameron Street, Launceston.
The Port Huon Fruit Growers'
Co-operative Association Ltd.,
Davey Street, Hobart.

SOLE MANUFACTURERS:

A. M. BICKFORD & SONS LTD.

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and at London, New York, and Brisbane.

Laboratories and Works:

90-100 WAYMOUTH STREET, ADELAIDE, AND PORT ROAD, WEST CROYDON.

Western Australia.

September Work in the Orchard.

THE FIRST PLOUGHING should be finished early this month, and the cultivators brought into use. No grower can afford to risk putting off cultivation in the expectation of good rains falling in the late spring. Dry winters are practically unknown in the fruitgrowing areas of Western Australia, and provided the land is kept in a thoroughly tilled condition during spring and summer, sufficient moisture can be conserved in the soil to enable the

fruit to attain good size and quality, but where cultivation is neglected, the fruit is undersized, lacking in juice, and poor in appearance.

Spray during pinking stage to control Pear scab (*Venturia pirina*). Continue spraying, where necessary, for Orange aphid.

Continue trapping for fruit flies, and commence baiting as soon as the various fruits become sufficiently ripe to serve as a depository for the eggs of the pest.

Planting of citrus trees should be completed this month.

Graft over old obsolete varieties of Pear and Apple trees to varieties which will pay for their upkeep in the orchard, but only do this if the stocks are sound and healthy; an unthrifty stock will never result in a good tree, no matter how well the grafting is done. Use the strap graft, and if not familiar with it, ask the Orchard Inspector in your district for a demonstration.—G. W. Wickens, Superintendent of Horticulture, in the "Journal of Agriculture."

REPORT FROM BRIDGETOWN.

Spraying—Cultivation—Organisation.

Mr. Owen Sparks, Bridgetown, W.A., sends the following interesting information under date August 19:—

Spraying.—The principal pests we have to combat are San Jose scale, red mite, and in a lesser degree, powdery mildew.

One of the worst pests that we had (to my mind), was woolly aphid, but since the parasite (*Aphelinus Mali*) has become established, our trouble with this very destructive pest is practically over. Personally, I have not had to spray for aphid since I liberated colonies of the parasite in my orchard, and the growers of this State owe a deep debt of gratitude to our Government Entomologist (Mr. L. J. Newman) for his work in obtaining the parasite and distributing it in affected orchards, and we are proud to point out that it was in this State that *Aphelinus Mali* was first used in Australia.

San Jose scale is another bad pest, but can be controlled by a winter spray of oil emulsion, 1 to 15, but I am afraid it will be almost impossible to eradicate.

Red mite, too, can be treated in the same manner followed by sprayings in the early summer with Black Leaf 40.

I hear very good accounts of "Volck" used as a spray when the leaves are coming out, as it seems

Melbourne City Council BLOOD FERTILIZER or Concentrated Manure

Manufactured from Animal Refuse at Desiccating Works, City Abattoirs, Flemington.

This organic manure may be used in its original manufactured form or as a basis for mixed fertiliser.

Analysis—Nitrogen, 8.02 per cent.

Phosphoric Acid, 1.25 per cent.

Potash, .61 per cent.

Price:—£9 per ton, Spencer-street Railway Station, or Melbourne Wharf; £8/15/- per ton at works; £8/5/- per ton in purchasers' bags at works.

POULTRY MEAL.

Price:—15/- per cwt.

Orders—to be forwarded to Superintendent, City Abattoirs, Smithfield-road, Flemington, W.I.

Descriptive Pamphlets may be obtained on application.

W. V. McCALL, Town Clerk.

Printed Fruit Wraps

We Specialise in CALIFORNIAN FIRST QUALITY WHITE AND COLORED

Growers and Packers

are you aware that Printed Wraps only cost approximately $\frac{3}{4}$ d. per case extra.

We solicit your enquiries for the coming season.

CHAS. R. GABB & CO.

88-94 Franklin St. . . . Melbourne

And at 16 Chester Street, Adelaide.

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PATENT ATTORNEY

"HENTY HOUSE," 499 LITTLE COLLINS ST.
MELBOURNE.

PORT OF MANCHESTER

Extracts from Official Market Reports

(Published weekly by British Minister of Agriculture) willingly forwarded to Growers, Exporters and others on application to address below. These records

PROVE Prices realised for Imported Fruit AT MANCHESTER Challenge Comparison

With results obtainable at any other market, as the following examples indicate:—

	Hull.		Liverpool.		London.		Manchester.	
	1st quality.	2nd quality.	1st quality.	2nd quality.	1st quality.	2nd quality.	1st quality.	2nd quality.
18/1/29. Oregon Newtowns (case) ..	15/6	13/6	15/-	13/-	13/6	11/-	17/-	14/-
American Greenings (barrel) ..	35/-	30/-	31/-	26/-	35/-	30/-	36/-	30/-
25/1/29. Oregon Newtowns (case) ..	15/6	13/6	13/6	11/6	14/-	11/-	16/-	14/-
" York Imperials (barrel) ..	36/-	29/-	28/-	22/-	30/-	24/-	36/-	34/-
" Baldwins (barrel) ..	30/-	26/-	25/6	23/6	30/-	20/-	32/-	23/-
" Russets (barrel) ..	34/-	28/-	31/6	28/-	30/-	25/-	35/-	33/-

GROWERS AND EXPORTERS! WHY NOT SHIP DIRECT to the best market as your competitors do?

For information as to charges, selling brokers and importers, etc., apply to:—

Cables & Telegrams—

"Portoman," Sydney.

CAPTAIN W. J. WADE,
8 Bridge St.,
SYDNEY, N.S.W.

to do no damage when used at 1-60, the weakest solution the makers recommend.

Powdery mildew can be got rid of if the trees be sprayed with Atomic Sulphur, which is now used in preference to sulphate of iron, the latter spray having in some cases burned the foliage—personally I had very good results with the latter spray, with no damage to the trees whatever, but it is a more difficult spray to prepare.

Curculio Beetle.—This beetle has been in plague form in a few orchards last season, and as it only moves about at night is very difficult to cope with. You will find an article in the last issue of the "Journal of the Department of Agriculture," by the Orchard Inspector in this district, dealing with this pest.

The metal band suggested by Mr. Flintoff (the Inspector), was his own idea, and where used has proved quite efficacious.

At a meeting held last week, Mr. L. J. Newman, the Government Entomologist, dealt with this pest, and stated that he had found beetles alive, caught in hessian bands round trees, only that week.

Cultivation.

Ploughing should be completed by the end of September, and culti-

vating will go on as often as we get a shower of rain and to keep the orchard soil well worked and weeds kept down.

The latter is very essential in any orchard where the curculio beetle has appeared as the beetle can and undoubtedly does live on grasses and clovers round trees and when the foliage on the trees appears gets into it and causes immense damage.

By putting metal bands round the trees and well cultivating the orchard the beetle ought to be starved out in time.

Organisation.

I hope the growers in the other States will have a better season next year than they had this. We had a bumper crop, and, I am still optimistic enough to believe that with improved marketing organisation the whole of the fruit grown in Australia can be sold at a profit. But—and it is a big "but"—the growers must organise, and if they will not do so voluntarily, statutory powers must be granted by the various State Governments to make those who now sit on the fence and enjoy the benefits obtained for them by the voluntary efforts of a few (to which they contribute nothing) come into a 100 per cent. organisation.

CANNED FRUITS REPORT.

The annual report of the Canned Fruits Export Control Board has been tabled in the House of Representatives. The high quality of the 1928 pack, it is stated, has been maintained. The quantity exported would be about 314,000 cases. The partial failure of the 1929 Californian Peach crop had resulted in enhanced prices for Australia. The N.Z. market for canned fruit was being captured.

DRIED FRUITS REPORT.

The annual report of the Dried Fruits Export Control Board for 1929, has been issued. In this the Minister for Markets stated the estimated production for 1928-9 was 70,000 tons, and the exports to Great Britain would total 50,000 tons. The proposal of the British Government to remove duties from food-stuffs would mean the loss of preference for Empire products, and this was viewed with apprehension in Australia. The matter would be dealt with at the next Imperial conference.

NITROGENOUS FERTILISERS IMPORTANT.

Some Evidence from the Tariff Board Enquiry.

The recent Tariff Board enquiry into the price of fertilisers proved from the testimony of representative fruitgrowers all over the Commonwealth that nitrogenous fertilisers have now assumed due importance.

The economic advantage of higher dressings of sulphate of ammonia, at present prices was shown, and the fallacy of employing what are popularly regarded as "cheap" fertilisers proved. The instance of this which excited comment was the Berri Experimental Orchard trials on citrus fruits. Over a period of eight years, 5 cwt. of sulphate of ammonia had returned the best yield, giving just 12 times the yield obtained from the plot to which 3 cwt. of superphosphate had been regularly applied. On a cost basis the ratio is 5 (sulphate of ammonia) to 1 (superphosphate), while viewed from the aspect of return the ratios become 12 (sulphate of ammonia) to 1 (superphosphate). The popular idea of superphosphate as being "cheap" by comparison with sulphate of ammonia, is here exploded.

Much of the evidence tendered had been placed before readers of "The Fruit World" before. There was the example from Mildura, where 1 cwt. of sulphate of ammonia, costing in the region of 20/-, returned an increased yield, which was valued at about £12. There was the case of the Geeveston orchardist, whose formidable fertiliser programme would cost at least £12 per acre, and who used 2 cwt. of sulphate of ammonia regularly, as part of it, but whose average yield of Apples was about 6 to 7 times greater than the State's average. From the Goulburn Valley was produced evidence to show that the nitrogen content of present mixed manures is not high enough, a grower from that district having asked his fertiliser supplier to add 2 lbs. of sulphate of ammonia to every 12 lbs. of the mixed line he was in the habit of using. In the same area another grower of soft fruits used 18 lbs. of a complete manure, containing 3 parts superphosphate, 1 part sulphate of ammonia, and 1 part potash, per tree. In such a dressing the sulphate of ammonia alone would cost about £3 per acre, yet the State as a whole averages something less than 4/- per acre for sulphate of ammonia, applied to orchards.

But here is the curious thing—

while the man who spends as much as £3 per acre on sulphate of ammonia figures in the press as an outstanding example of horticultural prosperity, the one who spends something approximating to the State's average is supposed to typify the parlous condition of the industry.

It was clearly shown that educative work is necessary before the proper appreciation of all forms of fertilisers is manifested. The sulphate of ammonia interests have spent about £30,000 in educational work and publicity, and have seen the once popular fancy that sulphate of ammonia was merely some variant of superphosphate dispelled—not completely dispelled, by any means—but sufficiently to prove that fruitgrowing, as one branch of horticulture, is largely dependent on the use of other elements of fertility than phosphoric acid. Mr. Cock, the Victorian Citriculturist, Mr. de Castella, the Viticulturist, Mr. Read, the Departmental Horticultural Research Officer, and many other prominent officials of the Department of Agriculture, regard success in the production of the various fruit crops of the State, to be largely a matter of the judicious use of nitrogenous fertilisers. Practical growers everywhere support the experts in the view.

Educational work will not cease with the demand for sulphate of ammonia in Australia meeting local sources of supply, as has happened this year, for which the advent of Imperial Chemical Industries into Australia, the work is far more likely to be intensified, and experiments on a liberal scale, with all sorts of fruit crops, and with all forms of nitrogenous fertilisers, should command early attention. And not the least important to the fruit-grower, sulphate of ammonia prices are likely to be lowered.

APPRECIATION.

"It is through the up-to-date information contained in the 'Fruit World' being constantly put before our members that our Bureau decided to become a subscriber, and I think it speaks well for the 'Fruit World' that they were responsible for it.

"Wishing you continued success."
—(Signed) Ivan L. Stone, Cherry Gardens, South Australia.

Dyes & Chemicals Ltd. will be represented at the Melbourne Royal Show at 39 Lennon-avenue. Experts will be in attendance to give information on fertilising matters.

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BARKER, GREEN & PARKE PTY. LTD., 533 Collins St., Melb.
Tasmanian Rep. **H. JONES & CO. LTD., Old Wharf, Hobart**

VOLCK—the original white oil spray

**Particularly effective
against Codling Moth**

The combination of VOLCK and Arsenate of Lead is a very effective spray—giving complete control of codling moth, while VOLCK alone completely destroys aphids, red spider, and all other orchard pests. It is the original white oil spray, and has had six years' wide commercial use. In America it is now being used as the standard spray for scale pests on Citrus trees. At the last meeting of the V.C.C.A., Mr. Lindner, of Wangaratta, said that many of the sprays on the market were in experimental stages. Growers did not know what they would do, but they did know what VOLCK could do. ("Citrus News," June, 1929.)

VOLCK was the only White Oil Spray used in the 1926-27 tests conducted at Harcourt, Victoria, by the Agricultural Department. The results were as follows:—

Arsenate of Lead, 5 lb. to 80 galls.	11.1 Grubby
Arsenate of lead, 4 lb. and 1 pint nicotine to 80 galls	12.9 Grubby
Arsenate of Lead, followed by "VOLCK"4 Grubby

"The only block which showed a satisfactory result, treated with two calyx sprays of arsenate of lead, followed by three sprayings with "VOLCK" Summer Spraying Oil, 1 to 32, stood out from the beginning of the fruit season. It was only late in the season that any attack by Codling Moth could be detected."—(Extract from the Journal of the Department of Agriculture, Victoria.)

VOLCK

Active ingredients, Petroleum 83%

Inert ingredients 17%

For codling moth control 1½ gallons VOLCK to 100 gallons of water gives best results and proves thoroughly efficient.

**Send for VOLCK descriptive
Literature, Price Lists, etc.**

Victorian Agents:

H.C. PANNIFLEX & CO.
26 MARKET STREET—MELBOURNE, C.1.

Sole Agents for N.S.W., Queensland, S.A., W.A., and Tasmania: Australian Fruit and Produce Co. Ltd., Fruit Exchange, Sydney.

SCIENTIFIC CONTROL OF CITRUS PESTS.

ECONOMICAL PEST CONTROL is one of the most important factors in successful citrus growing. Increased production, better quality and lower costs are demanded, and these in turn depend upon effective control of insect pests.

Since the year 1886, when fumigation with hydrocyanic acid gas was first found effective in controlling scale insects on citrus trees, growers and scientists have continually endeavoured to decrease the cost, increase the safety, and add to the effectiveness of control methods.

From their introduction until the season of 1917-18 there was continual change in fumigating materials and applicators before present methods were adopted.

Resistant Scale Found.

A growing conviction that even the best practices of fumigation were not controlling black scale as well as in former years became quite pronounced in the Charter Oak district (U.S.A.) in 1915. The same report came later from other regions, and soon it became evident that red scale was also showing marked resistance to standard control practices.

What if the resistance of these pests should continue to increase? What if resistant scale spread to other districts? Groves were virtu-

ally dying out because of failure to control scale. Something had to be done.

Growers appealed to scientists to work on the problem of resistant scales. They brought it to the attention of William H. Volck, head of the Research Department of the California Spray-Chemical Co., who in 1901, as a research assistant, had worked on spray injury of citrus trees caused by distillate petroleum sprays. This was the first research work which Mr. Volck had done for the University of California Department of Entomology, and was to start him into the field of insecticide research which he has followed for more than 25 years, and in which he is an international authority.

Mr. Volck bent his efforts and those of his staff to the solution of the resistant scale problem. Work which has been done in past years on kerosene emulsions and miscible oils was reviewed and tests made, but the materials were found either unsafe or not sufficiently effective, and were discarded. Undaunted by the failure of tests, these men kept seeking a successful insecticide.

A Discovery.

A test succeeded! A grower offered his grove for an experimental plot, saying that he would have to grub it out anyhow, unless the resistant scale was controlled. Other growers became interested and

sprayed. The acreage sprayed increased by leaps and bounds, and this material completely changed the citrus pest control of the world.

Resistant scale no longer defies the efforts of citrus growers. Many groves, which a few years ago, were on the point of being abandoned, have been brought back to profitable production by the use of this insecticide.

After six years of commercial use, Volck, so named in honor of its inventor, William H. Volck, is not only the leading spray for citrus trees in California, but it is being commercially used in fruit districts throughout the world.

Red Spider on Stone Fruits.

Red spider is the principal insect attacking Peaches, Apricots, Plums, and Prunes. A very satisfactory control of this insect may be obtained with one application of Volck, used at the dilution of one and one-half gallons to one hundred gallons of water. Spider sprays should be applied early in the season, before the insect has done damage.

Volck in conjunction with arsenate of lead effectively controls codlin moth, which was proved by the tests conducted by the Department of Agriculture at Harcourt in 1926-27—see "Journal of Agriculture," August, 1928.

H. C. Pannifex & Co., 26 Market-street, Melbourne, are the Victorian agents.—(Advt.)

THE PORT of HULL

is

The Fruit Centre

SERVING

Great Britain for the North & Midlands & Continent for all Ports in Northern and Eastern Europe

Daily sailings provide unrivalled situation for re-export of EMPIRE FRUIT
6½ Million Packages imported during 1927. Specially constructed REFRIGERATOR VANS carry FRUIT direct from STEAMER to inland destinations by EXPRESS TRAINS

RAPID HANDLING QUICK DESPATCH LOW CHARGES

London & North Eastern Railway

LARGEST DOCK-OWNING RAILWAY IN THE WORLD.

Full information supplied by:—

AUSTRALIA.—Burns, Philp & Co. Ltd., 7 Bridge-street, Sydney, and Branches.

NEW ZEALAND.—J. A. Redpath & Sons Ltd., 181 Cashel-street, Christchurch, and Branches.

SEPTEMBER SPRAYING.

SPRAYING is now one of the most important of orchard and vineyard operations. Using oil for Peach aphid and Black Cherry aphid, spray thoroughly and as late as possible before buds burst in the spring. Immense damage is done unless this pest is kept in check. If the pests appear, spray thoroughly with nicotine sulphate or tobacco wash. Also spray with nicotine to check black Peach aphid. A high pressure spray is necessary, up to 250 lb. if possible. A spray gun or pistol gives a drenching spray.

As many aphides are protected during first spraying, examine trees two days later and spray again if live aphides are noted. They breed with marvellous rapidity. Use the oil spray before the trees break into leaf in the spring.

Many growers have to this date given two sprayings with lime sulphur and some recommend a third drenching spray, to prevent germination of fungus spores and to check insect pest activity as the warmer weather advances.

The earlier sprays destroy eggs of red mite.

As varieties reach the pink blossom stage at differing periods, work your programme accordingly. Experiences vary in different parts of Australia and New Zealand. Some growers recommend lime sulphur 1-60 on pink Apple blossoms, others prefer two sprayings, the second at 1-80, but not to spray the trees in full bloom. Many varieties are self sterile, and need the pollinising work of the bees, which should not be hindered by sprayings.

Pears blossom earlier than Apples. With pears spray with Bordeaux 3-4-50 on varieties subject to black spot. Some varieties are notably more resistant to black spot—spray these with lime sulphur 1-80 to 1-100. With the latter spray add arsenate of lead to check codlin moth. Continue spraying stone fruits with lime sulphur, adding atomic sulphur.

NEW SOUTH WALES.

Orange (24/8/29).

The crop prospects in the Orange district this season, are very good. Cherries, Plums, Apples, and Pears all give promise of a very nice crop, but it is not likely to be quite so heavy as in 1928.—W. J. Nan-carrow.

The Simar Rototiller.—Since its introduction into Australia, the "Simar" Rototiller has met with a very favorable reception by fruit-growers and land workers generally.

The machine is motor driven, the operator needing only to walk behind the machine and guide it. The tines rotate and are driven by the engine, this being a form of rotary cultivation recommended by Sir John Russell, the noted soil expert, as the most scientific method of cultivation. For cutting down weeds, conserving moisture, or turning in a green crop, fruitgrowers have come to recognise the "Simar" Rototiller as a valued machine. Demonstrations will be gladly given by the various agents, whose names are to be found in the advertisement in this issue.

Export Markets.—The firm of Geo. Lister Pty. Ltd., Western Market, Melbourne, announce that they are representing some of the leading houses in the British and Continental fruit trade, and will be glad to handle fruit on consignment.

The Clyde Simplex Driers

For Drying
Fruit Vegetables and other Products

NO MORE WASTE FRUIT OR VEGETABLES

Simple - Self Contained

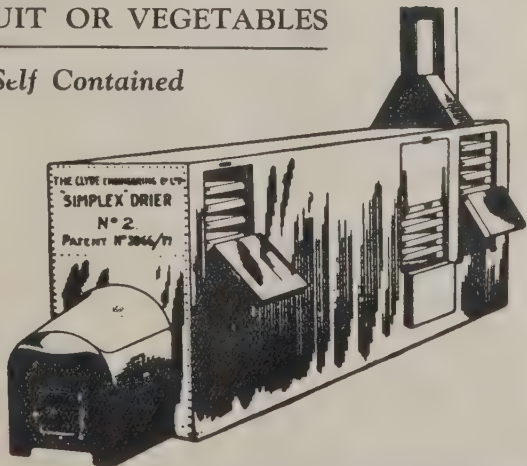
Made in Sizes to Suit

Householders
Small Orchardists

or

Large Factories

The
Clyde Engineering Co. Ltd.
GRANVILLE, N.S.W.





EXTRA EGGS



BY USING KARSWOOD

With almost monotonous regularity the leading men in the public life of the country keep telling us that half our troubles would be solved if we only produced more. "Produce—produce—produce" is their exhortation, and there is a very sound reason behind it. For greater production means reduced costs of production, and it is only by reducing the costs of production that Australia will be able to compete in overseas markets.

And the production of eggs is no exception. If you obtain a greatly increased number of eggs for an infinitesimal increase in cost, you have reduced your costs of production and are thus better able to meet a fall in price if it occurs. And if prices are up, then it is so much extra in your pocket. Karswood Poultry Spice increases egg production to an amazing degree, but it obtains its results in a perfectly natural manner. It does not force, because it contains no forcing ingredients, but gently coaxes the birds to more active laying. A half-pound packet, costing 1/—, supplies 20 hens for 16 days.

"From two eggs to six eggs a day"

Dear Sirs,

I have only 6 Black Orpingtons and 6 White Leghorns in separate pens. From the 6 black hens I was getting only two to three eggs a day before using Karswood Poultry Spice; after using for 11 days I got 6 eggs daily. From the 6 White Leghorns I was getting from 1 to 4 eggs a day; now I am getting 4 to 6 daily, and with eggs at the price now, it is a fine record

**KARSWOOD
POULTRY SPICE**

Increases egg-production without forcing, because it contains ground insects but no cayenne pepper, etc.

for Karswood Spice. Besides producing more eggs, it keeps both hens and chickens in a healthy condition. I believe in Karswood for young chicks, as it is a fine tonic, and encourages growth. I feed my fowls wheat and cracked corn alternate mornings; midday meal consists of green feed, sometimes lettuce and minced lucerne; evening meal, mash, not too soft, with Karswood Poultry Spice. I also give them chopped onions twice weekly, which I believe is a splendid tonic for fowls, and Epsom salts once a week; twice a week I dig a patch of earth for them to get grubs in. In conclusion, let me add that Karswood Poultry Spice is the poultryman's money maker.

(Sgd.) JAMES SMITH,

Cardwell Street, Canley Vale.

Original letter on file for inspection.

Make this Test.

Go to your local grocer, storekeeper, or produce dealer. Get a 1/- packet of Karswood Poultry Spice, then give it to half-a-dozen of your birds, in accordance with the directions on the packet. Do not expect immediate results — Karswood works naturally, not suddenly. It takes at least a fortnight to produce results, but they are good and sure.

Supplies.

Karswood Poultry Spice is obtainable from all wholesalers and stores at the following standard retail prices:
 ½lb. packet 1/-; 1lb. packet 2/-; 7lb. tin 13/-; 14lb. tin 25/-; 28lb. tin 48/-.

6.M.29



MONTHLY REMINDERS.

"THE more chicks this year, the more cheques next year."

This month is one of the busiest in the chicken-rearing season.

Early-hatched chicks are the easiest to rear.

The breeding stock is in better condition early in the season, more green feed is available, and the yards are fresher.

The only objection to early-hatched chicks is that they are subject to a false moult.

Disinfect brooders thoroughly before every fresh batch of chicks is put in.

Well-reared chicks from strong, virile stock are essential to profitable egg production.

Overcrowding in brooders leads to bad habits in chicks, such as toe and feather picking.

A good hatch generally means good chickens.

Keep chicken houses free from stock as long as possible before putting the chicks in.

Lime is valuable for chicks. There is more lime in milk than in lime water, according to a dairy expert.

TO ASSIST BEEKEEPERS.

Beekeeping matters were discussed at the recent Conference of the Victorian Chamber of Agriculture, at Warragul.

After Mr. W. A. Webb (Doncaster) had fully explained the activities of the Executive in the interests of apiarists and the preservation of native flora and fauna, he moved that the Government be urged to dedicate to the Forests Commission that portion of the Grampians known as the Blue Rocks. The President seconded the motion, which was strongly supported by Mr. A. M. Mactier (Executive), and carried unanimously.

Mr. Webb then moved that the Government be urged to place in the

hands of the Forests Commission the issuing of grazing licenses on all timbered Crown lands. Mr. Mactier seconded this motion, which was also carried unanimously.

WHAT HONEY DOES IN CAKE.

The use of honey instead of sugar is recommended for most household purposes.

The Cake Section of the American Bakers' Association recently sent a questionnaire to its members. One of the questions which was answered by leading bakers operating in twenty-four States was:—

"What will honey do in a cake mix?"

Some of the answers were as follows:—

"The Australasian Beekeeper"

The leading Bee Journal in the Southern Hemisphere.

A monthly magazine entirely devoted to beekeeping. Published in Australia for Australian Conditions. Subscription (5/- per year, prepaid, post free), may start now.

Free sample copy available on application to the publishers, Pender Bros. Ltd., Box 20, West Maitland, N.S.W.

Do not feed milk in a sour state one day and fresh the next.

Curdled milk is best, as it contains lactic acid, which is so necessary for the chicks.

After about 5 or 6 weeks, chicks require no heat, and can be taken from the brooder house. There is no best make of brooder. The main requirements are plenty of room, sufficient ventilation, and easy to clean and disinfect.

For the first few days after chicks are placed in the brooder house, see that they are not allowed to get too far away from the brooder heat.

Provide rice hulls or other suitable scratching litter, as chicks must be kept exercising.

Fresh ground, plenty of sunlight, milk, green stuff, clean water, fine grit and charcoal are all essentials in chicken management.

A little charcoal and fine shell grit should comprise the first meal for chickens. It prepares their digestive organs for the receipt of food that is to follow.

Chicks do not require coddling too much. Just give them sufficient warmth, clean quarters, and proper food.

Neglect is the chief cause of chicken ailments.

It retains moisture.
It colors rapidly.
It keeps the cake soft and moist.
It has a distinctive sweetness.
It increases the volume of the cake.

It has a good spreading action.
It develops a "chewy" mix.

These are all good reasons for using honey in cake formulas, and American Honey Institute is preparing formulas for cake and bread bakers which will help them better to use honey in their mixes and doughs and by personal observation to see just how honey helps to make better goods which have the qualities emphasised in the inquiries of the Cake Section of the National Bakers' Association.—"American Bee Journal."

The Fruit Trade

Market Reports and News Items

REPRESENTATIVE FIRMS, FRUIT MERCHANTS, AGENTS, EXPORTERS,
Advertising in this Journal.

BRITISH AND AUSTRALASIAN MARKET REPORTS.

NEW SOUTH WALES.

Sydney.

Chilton, F., City Fruit Markets.
Louey Pang & Samuel Wong Ltd.,
Thomas St., Haymarket.

VICTORIA.

Melbourne.

Andrew, Fred J., 416 Lit. Collins St.
Cave, F., & Co., Melbourne.
Davis, J., Western Market.
Dennys, Lascelles Ltd., Temple Court,
Melbourne.
Mills, A., & Sons, Western Markets.
Lister, G., Western Market.
Mills, J. B., & Co., Bank House, Bank
Place Melbourne.
Mumford, J. G., 449 Flinders Lane.
Pang & Co. Ltd., H. L., Little Bourke
Street.
Producers' Dist. Society, Western
Market.
Ross, J. W., Western Market.
Silbert, Sharp & Davies, Western
Markets.
Stott & Son, T., Western Markets.
Tim Young & Co. Pty. Ltd., Western
Market.
Vear, F. W., 49 William Street.
Wooll, G., Western Market.
Wholesale Fruit Merchants Assn., J.
D. Fraser, Temple Court, 428 Col-
lins St., Melbourne.

QUEENSLAND.

Brisbane.

Barr, A. S., Fruit Exchange.
Collard & Mackay, Fruit Exchange.
Comino Bros. Ltd., Fruit Exchange.
Cooksley & Co., Fruit Exchange.
Geeves, H. V., Fruit Exchange.
Robsons Ltd., Fruit Exchange.

TASMANIA.

Hobart.

E. R. Cottier Pty. Ltd., 88 Collins St.
Jones & Co. Ltd., H., Fruit Exporters.
Peacock & Co., W. D., Fruit Exporters.
and at London.

Lannceston.

Bender & Co. Pty. Ltd., 100 Elizabeth
Street.

NEW ZEALAND.

Dunedin.

Co-operative Fruitgrowers' of Otago
Ltd.

GREAT BRITAIN.

London.

Margetson & Co., Ltd., Covent Garden.
Monro, Geo., Ltd., Covent Garden.
Pask, Cornish & Smart, Covent Gar-
den.
Ridley, Houlding & Co., Covent Gar-
den.

Hull.

White & Son Ltd.
The Port of Hull, London and N.E.
Railway. Rep., Major H. S. Cole,
c/o Burns, Philip and Co. Ltd., 7
Bridge St., Sydney.

Manchester.

The Port of Manchester, rep., W. J.
Wade, 8 Bridge Street, Sydney.

GERMANY.

Bremen.

Fruchthandel, Gesellschaft.

Hamburg.

Asthelmer, P. H., & Son, Fruchthof.
Lutten, J. H., & Sohn, Hamburg.
Stier, Aug., Fruchthof, Repps. J. B.
Mills & Co., Bank House, Melbourne.
Timm & Gerstenkorn.

Great Britain.

London (23/7/29).

Apples.—Those from Lisbon, ex
s.s. "Cano," sold from 6/6 to 8/9 per
case, mostly 7/- to 8/-. Virginian
Apples, ex s.s. "Berengaria," were
of the "Yellow Transparent" variety,
and all landed in more or less slack
and bruised condition, realising from
14/- to 21/- per barrel. (All this
fruit was unclassified.) Oranges.—
Brazilian, ex the s.s. "Argentino,"
sold from 12/- to 20/- per case, small
fruit was mostly 17/- to 20/-, and
large fruit was mostly 12/- to 15/-
per box. Lemons.—Half cases of
Palermo Lemons made from 6/9 to
8/-, whilst boxes of 270/360's made
from 14/6 to 17/6, and a few lots of
490 count sold at from 13/- to 15/6;
cases of 300 count were mostly 16/-
to 18/6 per case; Murcia, 240 count,
sold at 18/6.

AUSTRALASIAN MARKETS.

New South Wales.

Sydney (22/8/29).

Apples.—Tasmanian, dessert, Jon-
athans 10/- to 20/-, Democrats 15/-
to 20/-, Croftons 13/- to 20/-, Scar-
lets 15/- to 19/-, Cleopatras 10/- to
17/-, few to 20/-, Sturmers 11/- to
15/-, French Crabs 12/- to 16/-,
local, dessert 8/- to 13/-, choice to
18/-; cooking, choice 12/- to 13/-,
medium 10/- to 11/-, small 8/- to
9/-; Granny Smiths, 10/- to 22/- per
bushel case; Bananas (genuine
grades), extra special 30/- to 33/-,
special 24/- to 28/-, choice 19/- to
23/-, standard 12/- to 17/- per case;
Citrus Fruits, Lemons, local, choice
10/- to 11/-, medium 7/- to 8/-,
small 5/6, irrigation 8/- to 11/-;
Mandarins, extra choice 15/- to 18/-,
choice 12/- to 14/-, medium 7/- to
9/-, small 3/- to 4/-; Oranges, Navel,
choice 14/- to 18/-, medium 10/- to
12/-, small 5/- to 7/-; irrigation, 12/-
to 15/-; Common, choice 12/- to 14/-,
medium 8/- to 10/-, small 5/- to 7/-;
Egg Fruit, Queensland, 5/- to 10/-;
Loquats, 3/- to 10/- per half case;
Passion Fruit, local, 3/- to 12/-;
Pears, Victorian, Josephines and
Packhams, 10/- to 17/-, Winter

Nelis 10/- to 15/-; Tasmanian, 12/-
to 16/- per bushel case; Pawpaws,
10/- to 18/- per case; Pineapples,
Queens, 8/- to 12/-, choice colored,
to 15/-; Strawberries, Queensland,
4/- to 6/- per tray, 12/- to 18/- per
doz. boxes; Tomatoes, Queensland,
3/- to 6/-, repacked, to 7/- per half
case.

Victoria.

Melbourne (29/8/29).

The following are the wholesale
price ruling at the Western Mar-
ket:—

Apples, good to choicest eating,
13/- to 18/- per case; cooking, 12/-
to 15/6; few special higher; green
Bananas, Queensland, special, 24/- to
25/-; choice, 23/- to 24/-; standard,
18/- to 22/-; plain, 14/- to 17/- per
double case; Lemons, 6/- to 10/- per
case, few specials higher; frost-af-
fected lots almost unsaleable; Man-
darins, 10/- to 18/-; Common
Oranges, 6/- to 11/-; Navel Oranges,
6/- to 11/-; special brands, to 16/-;
Passion Fruit, 16/- to 26/-; Pine-
apples, Queen, 10/- to 12/- per double
case; Grape Fruit, 13/- to 16/- per
case; few special brands higher.

The Federal Citrus Council of
Australia reports that prices were
as follow:—Navels, average stand-
ard, shed pack, best counts, 11/-, a
few 12/-. Other standard shed
packs, according to quality and
pack, best counts, 13/- to 17/- a
case. Specials higher, according to
pack and count; windfalls lower;
Grape Fruit, average standard, 13/-
to 16/-; selected lines, from 20/-;
Common Oranges, best packs, medium
sizes, 9/- to 11/-; others, from 6/-;
Mandarins, few 20/-; best counts,
14/- to 18/-, according to quality;
small, from 6/-; Sevilles, 12/- to 14/-;
Poor Man's Oranges, 13/-; Lemons,
best medium, 9/- to 12/-.

Queensland.

Brisbane (24/8/29).

Local Fruit.—Oranges, Valencias,
first crop, 10/- to 12/- a bushel case,
second crop, 5/- to 7/-; Navels, 10/-
to 14/-, second crop 8/- to 9/-; Man-
darins, Emperors 14/- to 18/-, small
7/- to 12/-; Scarlets 14/- to 18/-,
small 7/- to 12/-; Glens, 15/- to 20/-,
small 8/- to 12/-; Kings, 9/- to 13/-;
Excelsiors, 10/- to 13/-; Waratahs,
10/- to 13/-; Feutrals, 7/- to 11/-;
Grape Fruit, 10/-; Lemons, colored
5/- to 7/- a quarter case, inferior 3/-
to 4/-; Custard Apples, 3/- to 5/-;
Passion Fruit, 5/- to 8/-; Papaws,
ripe 5/- to 8/- a case, others 2/- to
4/-; Pineapples, smooth, 6/- to 8/-,

rough 8/-; Strawberries, best 8/- to 10/- a dozen boxes, others 6/6 to 7/6. **Imported Fruit.**—Apples, Tasmania, Jon. 19/- to 20/- a case, Dem. 18/- to 21/-, S.T.P. 15/- to 17/-, D.E.L. 17/- to 18/-, R.W. 17/- to 18/6, Aust. Beauty 17/- to 18/6, Hoovers, 16/- to 17/-, S.P.M. 16/- to 20/-, F.C. 15/- to 17/-, Crof. 14/- to 18/-, small Apples (2 inch) 12/- to 16/-; Pears, Tasmanian, B.P. 14/- to 15/-; Victorian, W.N. 15/- to 17/-, Jos. 16/- to 17/-, P.T. 16/- to 18/-; Oranges, N.S.W. 12/- to 13/- a bushel case; Navels, 14/- to 16/-; Lemons, 14/- to 15/-.

South Australia.

Adelaide (24/8/29).

Apples, eating, 16/- to 13/- per case; cooking, 14/- to 16/-; Bananas, Queensland, 34/-; Lemons, 6/- to 7/-; Melons, pie, 10/- per cwt.; Oranges, Common 8/- per case, Blood 9/-, Mandarin 16/- to 18/-, Navel 12/-, Poorman 10/-; Passion Fruit, 34/-; Pears, eating 16/-, cooking 12/-; Pineapples, 18/-.

Tasmania.

Hobart (24/8/29).

Prices ruling:—S.T.P. 6/- to 10/6, F.C., 5/- to 9/-, Democrats, 6/- to 11/-, New Yorks, small 8/-, Jon., spotty, 4/- to 5/-, S.P.M., spotty, 3/- to 8/-, R.B., spotty 4/- to 5/4, F.C.B., spotty 4/- to 5/-, Stone Pippins, spotty 4/- to 6/-, T.P. 3/6 to 4/6, Delicious 6/6 to 15/9, C.P.M., spotty 4/- to 5/-, Munroes, spotty 3/6 to 4/6; Pears, Winter Coles, 6/- to 7/- per half case.

Western Australia.

Perth (20/8/29).

Apples.—Dunn's Seedlings, flats 4/- to 7/-, dumps 10/- to 16/-, small from 4/-, Rome Beauty 7/- to 14/-, special to 16/-, Yates, flats 3/- to 6/6, dumps 12/- to 16/-, special to 16/-, Yates, flats 3/- to 6/6, dumps 12/- to 16/-, special to 19/-, small

from 3/-, Granny Smith, flats 8/- to 10/-, 15/- to 18/-, special to 20/3, others from 5/-; Cleopatra 9/- to 15/-, small from 3/-, Doherty 10/- to 14/-, special to 16/-, others from 7/-; other varieties, flats 3/- to 6/6, dumps 8/- to 14/-, inferior from 2/6; Pears, $\frac{1}{2}$ dumps 4/- to 9/-, flats 9/- to 12/6; Oranges, plain 3/- to 7/-, dumps 7/- to 9/-, Navels 4/6 to 13/-, dumps 9/- to 13/-, special to 16/-, others from 6/-, Lemons 2/6 to 8/-, Mandarins 7/- to 12/-, special to 13/6, others from 3/-; Tomatoes 15/- to 23/-, others from 10/-; Passion, $\frac{1}{2}$ dumps 16/-, $\frac{1}{4}$ cases 21/-; Cape Gooseberries 7d. to 9d.

New Zealand.

Dunedin (15/8/29).

Messrs. Reiley's Central Produce Mart report prices ruling as follows:—

Apples, Delicious 7/- to 12/6, Jonathans 6/- to 7/-, Sturmers 6/- to 10/-, others 3/- to 7/-, cooking 4/- to 7/-; Dessert Pears, Winter Coles 8/-, inferior 2/- to 4/-, Winter Nelis 8/-, other varieties 2/- to 4/6, over-ripe unsaleable; Passions, Australians 20/6; American Valencias 38/-, Victorian Navels 22/-; Lemons, Missions 57/6, Australian 22/6, New Zealand 20/-; Mandarins, 'choice 23/-; Grape Fruit 33/-; Poor Man's 7/- to 10/-; Bananas, ripe 27/6; Coconuts 16/-.

CITRUS MARKET NEWS.

The Melbourne market representative for the Federal Citrus Council of Australia (Mr. G. Kitchen Kerr), reports as follows, under date August 23.

Sales of Navel Oranges have been slack, except for best packs, during the week. Progress of the irrigation in a number of districts reduced supplies, and a big quantity was diverted to the Sydney market.

Navels, average standard, shed

pack:—75, 7/-; 84, 8/-; 96, 9/-; 112-126, 10/-; 140-200, 11/- . Other standard shed packs according to quality, pack and demand, best counts, 12/- to 16/- a case. Specials higher, according to pack and count.

Grape Fruit, average standard, 13/- to 16/-, selected lines from 20/-; Common Oranges, best packs, medium sizes, 9/- to 11/-, others from 6/-; Mandarins, best counts, 14/- to 18/-, according to quality, small from 6/-; Sevilles, 12/- to 14/-; Poormans, 13/-; Lemons, medium, 9/- to 11/-.

SELLING FRUIT IN LONDON.

Pudding-lane Auction Transferred to Spitalfields.

FRUITGROWERS and exporters in Australia and New Zealand will note with interest the disappearance of a century-old landmark of the fruit trade. This refers to the closing of the Monument auction salerooms at Pudding-lane, where so much fruit from the British Dominions has been regularly sold in the past, and the transference of its selling activities to more modern and commodious premises at the new Spitalfields Auction Fruit Exchange.

Mr. H. G. Colombie, Temple Court, Melbourne, who represents some of the leading fruit brokers in England and the Continent, sent to us extracts from English papers giving details of the transactions. The reports state that at the new Spitalfields markets there are two auction rooms for the disposal of imported fruit, capable of accommodating 850 buyers in all, and it is claimed that they will be the largest auction rooms in England.

In an address presented to Her Majesty the Queen at the royal opening of the extension of the Spitalfields Markets in November, 1928, the City Corporation stated they believed "that the provision of these buildings at an estimated cost of £300,000 will restore London to its former pre-eminence as a distributing centre for imported fruit."

Thus the coming crop of Australian and New Zealand fruit, which is sent to London to be sold by the city fruit brokers, will go through the new Spitalfields Markets Auction Saleroom.

TO INSECTICIDE & FERTILISER MANUFACTURERS, FRUIT EXPORTERS.—Gent, Horticultural Degrees, would represent the above with organisation as traveller.—"Aggressive," "Fruit World," Melbourne.



TREES

Backed by a Reputation

are supplied by Goodman's—quality trees of every variety, that will grow well and give splendid fruit crops under all climatic conditions. Write for free Catalogue.

GOODMAN'S NURSERIES

P.O. Box 47 BAIRNSDALE, VICTORIA

GRUBBING

Thousands in Use
It earns its Famous LOW PRICE in a Few Days
Write for Catalogue

WITH A
"DIGGER" WINCH

A Man can uproot more Trees and Stumps in a Day than he would dig out in Ten Days

QUICK MANUFACTURING CO., 75 Penders Street, Thornbury, Victoria



Are You Planting Fruit Trees this Season?

IF SO, DO NOT
FORGET THAT
WE HAVE
AMPLE SUP-
PLIES TO
OFFER.

Trees grown at Kinglake and Yarra Glen
Larger, Stronger, Healthier than ever

Apples.—Jonathan, Five Crown, Rome Beauty,
Cleopatra, Granny Smith, Delicious, Democrat,
Statesman, etc.

Also Pears, Plums, Peaches, Apricots, Quinces.
Best varieties.

We must sell and are prepared to sacrifice the
best trees for one season at prices far below the
cost of production. Do not miss this chance—

Write now.

JAMES W. LAWREY, Kinglake Nurseries, Yarra Glen, Vic.

M. ASVARISCH
FRUIT BROKER

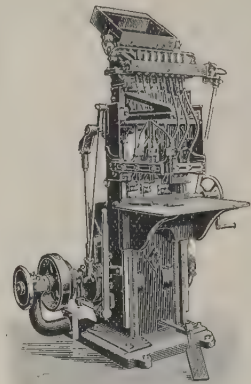
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Australian Spotted Wilt on the Tomato : can be Controlled by Raido Dust :

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100 per cent. of the Vegetable Growers on the Adelaide Plains have this year adopted the dusting method for the control of pests and diseases common to vegetables during the Autumn period. These results have been accomplished during the worst known season for Cabbage Aphis.

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The Value of Nitrogenous Manures.

£2/5/- Per Acre on Manures Brought an Additional £19/15/- Per Acre for Fruit: A Profit of £17/10/- Per Acre.

COMPARATIVE experiences in relation to fruitgrowing are always of value.

As the subject of manuring is of great interest to Australian fruitgrowers, it is worth while to compare conditions with those in other parts of the world.

The following information was compiled by Mr. R. Lucas in Eastern U.S.A., and published in "American Fruitgrower Magazine."

It will be noted that the trees are large, 48 per acre, and set 30ft. apart both ways, and the orchard is in sod. An expenditure of £2/5/- per acre for fertiliser brought in an additional £19/15/- per acre for fruit—a profit of £17/10/- per acre.

Mr. Lucas writes:—

The ramifications of the root system of mature Apple trees are large, both in area and in depth, but, due to an Apple tree remaining in one location for years while it grows and matures a large framework, on which it must produce the fruit yields, it is only a few years until the root system draws out most of the available plant food within reach of the roots. I have learned, through experimenting on blocks of trees in our orchard, that, because of this, several distinctly unprofitable features develop.

First, the setting of fruit begins to decline and, while there may be a fair bloom, the trees appear to be in a devitalised condition so that many blooms fail to set. Of the fruits that do grow, many leave the trees during the June drop (December in Australia). This was one of my principal troubles. It was the direct curtailment of my monetary profit that first started me using commercial plant food.

Second, our trees as they commenced to suffer from malnutrition took on a sort of sickly yellowish appearance, losing their green color. There was also quite a noticeable curtailment of terminal growth. The trees which did not secure adequate plant food were unable to properly withstand our usual summer drought. They commenced dropping their foliage in the latter part of the summer just at the time when they should be growing at their best and should be forming fruit spurs for the following season's crop.

Third, trees securing inadequate nourishment were unable to grow and mature first grade fruit.

To secure some accurate information to enable us to feed our orchard most profitably, we marked off several sections of trees as near identical as possible, applying, except on one section which we kept for checking purposes, different plant foods or amounts thereof.

We finally found that the use of ammonium sulphate alone gave us by far the best and most profitable returns.

The use of superphosphate and sulphate of ammonia mixed gave us practically the same returns and results as where nitrogen alone was used, but at a somewhat greater increase in cost for materials and application.

The use of superphosphate alone gave us practically no benefits whatever, so for our condition and trees, I concluded that phosphoric acid is not sufficiently lacking in our orchard soil to make its usage pay.

The blocks of trees I have experimented on mostly have been mature Jonathans, some 25 years old.

About a month before average blooming is the period I have found best for applying the nitrogen, and on our last Apple crop I applied what I have found to be the most profitable amount of sulphate of ammonia to apply—five pounds to the tree.

Due to the fact that our orchard is set in sod, the grass uses nitrogen as well as the trees. Very few feeding rootlets are close to the trunks, so I do not place the plant food closer than some three of four feet from the trunks, broadcasting it in a large circle to well past the spread of limbs. I do not work the plant food into the soil, but apply the material plenty early so the first rain will dissolve it. In solution, it quickly soaks in and is distributed through the soil.

Outside the application of sulphate, our practices were identical to those of previous years, five sprayings being given. At harvest time for our information I had the sections picked and measured separately, which resulted in a check-up of 67.71 barrels per acre from the trees receiving the sulphate of ammonia, and 46.66 bar-

rels per acre from the unfertilised trees, figuring 48 trees per acre, ours being set 30 feet both ways.

While the Apples produced by the fertilised trees were better and larger, although of little difference in color, they were worth more per bushel as picked. However, they were sorted and put into bins before I could secure the desired tabulations on the pro ratio of firsts to culls, so I figured all our Apples at the same price, 18/9 per barrel, which was the amount our Jonathans sold for. The Apples from the check section, which received no plant food, brought us £43/15/- per acre, while the fertilised trees returned £63/10/- at a cost of £2/5/- per acre for fertiliser.

The illustration shows an average tree which received the spring application of sulphate. It portrays exactly the healthy, vigorous condition of the trees and set of fruit, as well as the luxuriant growth of grass within the fertilised circles.

Wouldn't Give In.

An Aberdonian who had hired a boat for two hours for a shilling, felt sick at the end of the first hour. "Will you allow anything for the hour that's gae gang?" he asked the boatman.

"Certainly not," was the reply.

"Oh, weel," said the Aberdonian, "I'll just stick it."

"Never Say Die."

A very wealthy lady, looking through her window, saw a poor man shivering and leaning up against a lamp-post. She wrote on a piece of paper "Never Say Die," wrapped up a ten shilling note in it, and sent her maid out with it to the man.

That same night, just before dinner, the man called and handed her £5/10/- saying: "Here's your money, madame; Never Say Die won at 10 to 1, and you were the only one who backed it."

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Jones: "You mean you've had this wreck for fifteen years and never had a car."

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We strongly emphasise the need for accurate sizing and firm packing in order to maintain and expand the demand for Australian fruit. We can do the rest.

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In addition to 7,000,000 potential consumers in the Metropolis, we have customers in practically every town of importance in the British Isles: therefore, we are in a position to place consignments where the keenest demand prevails.

Every consignment received is sold on its merits, strictly in accordance with the HORTICULTURAL PRODUCE (Sales on Commission) ACT, 1926, and each individual sale recorded; therefore, consignors can be assured of receiving exactly the same price as their fruit realises.

Private sales have a distinct advantage over auction sales, the former ensuring more stable prices. Average prices obtained are ample proof of this.

We strongly recommend accurate grading, and a uniform weight of 40 lbs. to the case; also that no 2½ in. or 3 in. Jonathans be shipped: then a higher average price will automatically result.

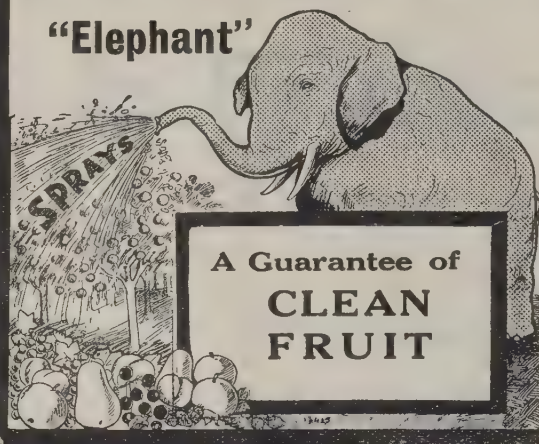
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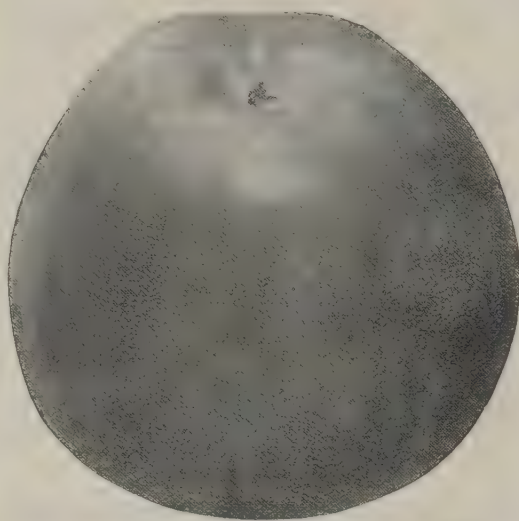
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AN OPEN LETTER

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Representing the Deciduous, Citrus and Dried Fruits Industry of Australasia.

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We do not hold ourselves responsible for the views expressed by our correspondents.

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Changes of copy for advertisements must be in our hands on or before the 12th of the month prior to publication.

Readers are asked to make their purchases from our advertisers, who cover all lines of interest to orchardists, at the same time mentioning this journal. By so doing, the grower, the advertiser, and this paper will benefit.

Every care is taken to publish advertisements from reliable houses only, and to see that advertisements of an undesirable nature are not published. The management reserve the right to refuse to publish any announcements that they may regard as undesirable, either from the point of view of the goods offered or in the wording of the advertisement notwithstanding the fact that a contract may have been entered into for the use of a certain space.

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WESTERN AUSTRALIA.

Successful Fruit Season.

Speaking at the Farmers' Convention, Perth, on August 13, the President, Mr. M. T. Padbury, reviewed the States' agricultural activities. With regard to the fruit industry, Mr. Padbury said:

"While this has been a very poor year for many of the wheat farmers, I am pleased indeed to say it has been a good one generally for our fresh fruit growers, particularly in Apples. Not only has the yield been good, but the prices have been right, also. The good prices were due in a measure to the failure of the crops in the Eastern States, and while we are pleased our good season enabled us to supply the requirements, we very much regret the severe loss suffered by our fellow growers over there.

"There appears to be a general wave of prosperity over the South-West, for, in addition to the fruit growers, the dairy farmers generally are enjoying good prices, and I have not heard of any complaints from the potato growers."

Editorial Chats



THE article on root stocks in our July issue, by Mr. R. G. Hatton, M.A., of the East Malling Experiment Station, will be followed with deep interest by all fruitgrowers and scientific workers.

It is abundantly evident that rule of thumb methods must go, and that in their place there must be substituted practices based on scientific knowledge.

* * *

The discussions at the recent Citrus Growers' Conference were interesting. For some time past there has been a definite desire on the part of fruitgrowers for a visit from Mr. A. D. Shamel, the noted bud selection expert and plant physiologist of the U.S.A. Department of Agriculture.

While it is admitted that this visit would be extremely helpful, another view is taken by those who hold the purse strings, and that is that the money could be even better spent by sending Australian horticulturists to California to study methods at first hand and to adapt their knowledge in continued service to Australia.

In other words, a visiting scientist could only spend a limited time in each of the States in a continent the size of Australia. Whereas, by Australian horticulturists studying intensively in California, they could bring back the benefit of proved experience and new ideas for adaptation here.

This view, in fact, was accepted by the Citrus Growers' Conference recently held in Melbourne.

* * *

There are other aspects of this situation, however, which will bear thinking out. For instance, we have published articles from time to time dealing with the beneficial effects of bud selection as applied to deciduous trees—Apples, Pears, Peaches, and Cherries.

The proposals are generally known, but there is an opportunity for the right emphasis to be placed upon this important subject.

It is in relation to the larger and more comprehensive aspect of fruit-growing as a whole, that the suggestion was put forward for a visit from Mr. Shamel. This scientist not only did wonderful work in improving the

citrus industry, but did equally good work in relation to Pineapples, sugar and Bananas, while bud selection work on Peaches, Pears, Apples and other deciduous fruits is in hand.

There is need for greater appreciation on the part of the Australian public as regards the benefits of science.

It was thought that by the coming of a noted American scientist trained under climatic and soil conditions similar to Australia, four distinct benefits would accrue.

(1) By the examination of the work already done here, in relation to bud selection.

(2) The formulation of a programme based on lifetime's experience for the continuation of the work in bud selection here.

(3) That this programme would include all kinds of fruit and would be of immense service in relation to the improvement of nursery practice generally.

(4) Because of the public appreciation the way would be made easier for funds to be provided from both public and private sources for bud selection work in particular, and scientific experiments in general.

* * *

However, these matters are not being lost sight of, and it is certain that the Council for Scientific and Industrial Research, the Universities, and the Departments of Agriculture are giving close consideration to the larger aspects of research in relation to Australian primary industries.

THE MECHANICAL FRUITERER.

Enterprise at Manchester, England.

Fruit Supplied by Slot Machines.

THE tendency to shut shops early in England has brought into being the mechanical slot machine.

You insert your coin and obtain your cigarettes, chocolates, or what not. It was not long before fruit was added to the list of things which must in this way be always available for the people.

The new slot machines, which have appeared in Manchester, are extremely attractive. They are divided into a number of glass-fronted compartments, and in each compartment is a basket containing a selection of appetising fruit. Oranges, Grapes, Bananas, Apples, Muscatels, Nuts, Peaches and Apricots, all find their place, and it is difficult to resist so seductive an invitation to invest sixpence or a shilling. Great care is taken to keep the exhibits fresh and wholesome. Every day the machines are opened and new fruit put in.

So it goes on. There seems no end to the ways in which fruit can be sold to the people of Manchester and district. It is all a matter of presenting the goods attractively and abundantly. The slot machines are an object lesson.

Anyone who desires to improve his standing in the growing, but by no means saturated, British market, would do well to consider Manchester as the centre of distribution.

SELLING FRUIT IN MELBOURNE.

A Curious Anomaly.

It's a Punishable Offence to Sell Fruit on the Railway Station Side of Flinders-street After 7 p.m. for Five Months of the Year.

THERE'S a curious anomaly in the selling of fruit in Melbourne—the second largest city in Australia.

A few years ago, owing to overlapping legislation, the sale of fruit in the city of Melbourne for five months of the year was seriously curtailed.

Then the "Fruit World" took up the cudgels, and after much effort new legislation was introduced, freeing the city area from these harassing restrictions.

But only the north side of Flinders-street was included in the area in which fruit can be sold in the evenings from May to September. So those busy stands alongside the Flinders-street railway station have to close at 7 p.m.

Remember, too, that there are boat races and the Agricultural Show in the "forbidden" months—Melbourne receiving a big influx of visitors.

But inside the railway station fruit is sold freely every night. Good luck to Mr. Clapp for doing it.

But we wish that these restrictions on the barrows and shops did not exist.

On one side of the street fruit is sold; on the other side—right where the traffic is thickest—it is a punishable offence to sell fruit.

If suburban fruit shopkeepers don't want to open in the evenings from May to September, they should not reasonably object to the sale of fruit from barrows on the south side of Flinders-street.

Let the River Yarra be the boundary, not Flinders-street. This would result in thousands more bushels of fruit being sold.

ENTOMOLOGICAL RESEARCH.

Need for Thrips and Codlin Moth to be Studied.

THE need is very great for continued research work to assist in the control or eradication of insect pests attacking fruit and vegetation generally.

The news that Mr. G. T. Levick, Assistant Entomologist, has resigned from the Science Branch of the Victorian Department of Agriculture is keenly regretted by fruitgrowers. Mr. Levick had been conducting appreciated research into the thrip pest, also the codlin moth.

With regard to thrips, it is believed that the pest which has brought particular harm to fruit crops is a native pest, thrips imaginis, and not thrips tabaci—an imported variety—as is commonly supposed.

Growers of berry fruits in the Mt. Dandenong district feel very keenly that the research work into the thrips pest should be gone on with, while growers at Harcourt—where codlin moth studies were carried out—are equally convinced of the necessity for continuing the investigations.

A strong case is being prepared for presentation to the Department of Agriculture, and leading fruitgrowers are being invited to join a deputation to lay the whole position before the Government.

The world owes a debt of gratitude it can never repay to faithful scientific workers in every land. There is a great brotherhood of service in scientific exploration of all kinds. The scientist knows no boundaries of race, color, or nationality. Any great truth or principle discovered anywhere is given freely to the world.

MR. CLAPP AND THE CITRUS INDUSTRY.

Co-operation and Standard Packing.

Mr. H. W. Clapp, Chief Commissioner for Railways, together with Mr. H. Shannon and several executive officers of the Railways Department, recently visited Mildura and district.

At a smoke social of the Mildura district branches of the V.C.C.A., Mr. Clapp said that the idea that inspired whatever the railways had done for the primary producers of the State was one of "mutual self interest." Co-operation was essential. While in the United States he had been impressed with the attractive pictures shown on the ends of fruit cases. He said that these labels were sufficiently attractive to "make a child cry for fruit, and therefore the child had to have it."

Co-operation was necessary within the citrus-growing body. There was too much grumbling and misunderstanding amongst growers. Such a state of affairs had to end.

From enquiries he had made, he was convinced that the Citrus Association was accomplishing much for little expense.

Mr. Clapp further stated that he had been disgusted at the condition of some of the citrus fruit sold at the Western Market. Some growers were not playing the game. He did not know of any finer citrus fruit in the world than that grown in Victoria, but that it was often badly packed.

The railways encouraged the growers to join the Victorian Central Citrus Association. The railways were prepared to pay a fair, proper and decent price for fruit, but it had to be of good quality. Growers should try to make their fruit look attractive and clean. This would bring better prices.

A standard pack through a packing shed should be used to ensure quality, quantity and continuity.

Continuing, Mr. Clapp said that 40,000 to 45,000 cases of fruit were bought by the railways each year. The railways had 26 stalls and 100 juice-extracting machines operating for the sale of fruit drinks. The Railway Department and the Bureau of Science and Industry were conducting experiments in regard to the cool storage of Oranges to demonstrate the storage life and the possibility of marketing them in London.

Citrus-growers should study each tree and make sure that there were no "drones" in the groves.

In conclusion, Mr. Clapp stated that citrus-growing in Australia was in its infancy. Co-operation was needed for its success.

FEDERAL ELECTIONS.

The Federal Arbitration Court should Go Out.

But What About the Sugar Agreement?

THERE is general endorsement among fruitgrowers and primary producers regarding the proposals of the Federal Government to do away with the Commonwealth Court of Conciliation and Arbitration, leaving such industrial matters to State tribunals.

In the first place a "Court" with a bewigged judge is not the place in which to settle industrial disputes. Australia is as large in area as the United States of America, or two-thirds the size of Europe. Our vast country, with its wide range of climate and varying natural resources needs more decentralisation and freedom to develop without being hampered by the restrictions imposed on industry by one academic Court on Arbitration,—whose awards are obeyed or flouted at will.

But while candidates are electioneering, fruitgrowers are asking pointed questions regarding that bugbear—the sugar agreement. This is an agreement which gives preferential treatment to the sugar industry, to the detriment of the whole community, and particularly the fruit-growers.

Here is the question on which candidates should express themselves clearly:—

Are you in favor of a renewal of the Sugar Agreement, and the continuance of the sugar embargo?

(R. E. Boardman, 78a Victoria-street, Melbourne.)

U.S.A. is rapidly developing more roadside markets for the sale of fruit.

In Victoria, efforts are being made to close this profitable avenue for growers to thus dispose of their fruit.

Encouraging results have been achieved with the codlin moth parasite, *Trichogramma minutum*. Experiments are being continued by Dr. Tillyard, at Canberra.

Success with oiled wraps in cool storing Granny Smith Apples is reported from Batlow, N.S.W. Surprise is expressed that oiled wraps are not more widely used.

Fruit Pies Will Solve Australia's Distribution Problem.

Many methods are under consideration to assist in the campaign to secure an increased consumption of fruit.

One very important method is as yet untried in Australia. We should take a leaf from our American cousin's book, and **TEACH THE PEOPLE TO GET THE FRUIT PIE HABIT.**

* * *

When you ask for pie at the average Australian restaurant, you get meat pie. But ask for pie at any American restaurant, and you get fruit pie.

Therein lies the whole difference.

If a campaign could be launched to have fruit pies—real fruit pies—offered at eating-houses, the whole of our so-called over-production problem would vanish into thin air.

And when you do ask for and receive a "fruit" pie, it is not to be compared to the fruit pies which are obtainable in any and every American city and village.

It is up to the fruit growers to absorb these facts. For if they will set about the matter earnestly, Australians can be taught the fruit pie habit.

One-third of the population of Australia is in two cities—Sydney and Melbourne.

If only the thousands of people who daily ask for "pie" could be given fruit pie—wholesome, appetising, delicious fruit pies—a big problem would be solved.

Think of this, too—the fruit which is bought wholesale for the "pie" trade is not the choice dessert quality, but the smaller and lower grade fruit, which all too frequently glut the market in competition with the choicer quality fruit.

Here then is a way to clear the markets from being clogged with lower grade fruit, leaving the way clear for the grower to get better prices for his choicer lines and at the same time the public would be given a wholesome product, served in a pleasing manner. The health of the people would be improved and the fruit industry would be uplifted and stabilised.

Hundreds of tons of fruit would then be consumed daily.

THE FRUIT PIE IS THE SURE METHOD FOR GROWERS TO WIN PROSPERITY.

Here are some of the fruit pies you can get any day of the year in any city or town in U.S.A.:—

- Apple pies.
- Pear pies.
- Peach pies.
- Strawberry pies.
- Loganberry pies.
- Prune pies.
- Raisin pies.
- Lemon pies.
- Orange pies.
- Pineapple pies.
- Apricot pies.
- Etc., etc.

* * *

Now there's another thought—

The fruit pie in U.S.A. is totally different from the fruit pie served in Australia.

Ours are generally round, with plentiful crust top and bottom, about the size of an average saucer.

But the American "pie" is served in triangular segments. Apparently the pies are made in deep containers of about 10in. diameter, and cut into eight segments. The fruit is packed sufficiently firmly to be eaten with a fork.

It looks good, and it is good.

There would be nothing attractive about our fruit pies in a shop window. They would, in fact, need to be labelled as to their contents.

But the pies advocated in this article tell their own story. You can see the rich red Strawberries or Loganberries along both faces of the cut. You are attracted by the inviting appearance of the Raisin pie, Apple pie, Pineapple pie, etc.

Wouldn't it be just fine if our Railway Department would provide pies like these?

Mr. H. W. Clapp spent years in America. He is a good friend to the fruitgrower. He knows what these American pies are like. The other day the Premier, Sir Wm. McPherson, said Mr. Clapp had done more than any single individual to improve the fruit industry.

The fruitgrowers need to stand right behind this movement, and to push fruit pies for all they are worth.

* * *

We recently wrote to our good friends, the "Pacific Rural Press," on this subject. They kindly re-published the article from the "Fruit World," voicing our needs in this matter, and invited their readers to send us in details for preparing the delicious fruit pies.

From the many recipes sent in—and we would like to thank all who responded—we are publishing some which will indicate to our fruitgrowers, housewives, caterers and restaurant-keepers the lines on which to proceed.

General Directions for Pie Crust.

The following directions for piemaking are to hand from the office of the Home Demonstration Agent, Solano County, California:—

Good pie crust is crisp, flaky, tender and palatable. Pie crust should not be tough, greasy, crumbly or soggy. Careful manipulation with a standard recipe is all that is needed to make good pie crust.

The least handling possible makes the best crust. Allow more pastry for a bottom or single crust than for an upper crust. Try to estimate the amount required, as rolling makes the crust tougher.

Sprinkle a little flour on the board, roll the pie crust lightly one-eight inch thick. Do not press hard, and do not roll the edges flat to the board, but lift the pin from the crust when it is near the edge. Lift the pastry from the board to prevent its sticking. One suggestion is to roll out the pastry on waxed paper.

Fold the pastry over the rolling-pin to lift it from board to the pan. Spread on a tin from the centre out, fitting the crust closely to the tin. To get all air bubbles out, work from centre out. Do not stretch the crust. For one crust pies without filling, the crust may be baked in the tin, on the back of the tin, or between two tins. Bake the last two upside down. Prick this kind of crust to avoid air bubbles. For one crust pies baked with filling, or for two crust pies, do not prick the crust. Do not grease the pie tin unless you wish to make the under side of the crust especially brown. Wet the edge or rim of the lower crust before the top crust is added to help

crusts hold together. A top crust should have holes to allow steam to escape. Prick or cut these holes, but do not make them too large.

Bake pie crust in a hot oven for first 10 to 15 minutes to set the crust. Too great heat applied to the bottom of a single crust may cause it to rise from the tin. Use deep, narrower pie tins rather than wide, shallow ones.

Sift a little flour over the lower crust and through the ingredients before the top crust is added, or sift very fine bread crumbs over the bottom crust.

To brown the top crust of a two crust pie, brush over the top with cold milk before baking.

Pie Crust—Plain Paste.

Plain Paste.—Standard recipe: (Proportion is 4 to 1).

1 cup flour (sifted and then measured), 4 tablespoons lard or substitute, $\frac{1}{2}$ teaspoon salt, $\frac{1}{2}$ teaspoon baking powder, water to make dough, about 3 tablespoons.

Larger Amount.— $1\frac{1}{2}$ cups flour, 6 tablespoons fat ($\frac{1}{3}$ cup), $\frac{1}{2}$ teaspoon salt, $\frac{1}{3}$ to $\frac{1}{2}$ teaspoon baking powder, water.

Hot Water Pie Crust.

Using the standard recipe—decrease fat $\frac{1}{4}$, and increase water proportionately. (Proportion is 3 to 1.)

1 cup flour, 3 tablespoons lard, $\frac{1}{2}$ teaspoon salt, $\frac{1}{2}$ teaspoon baking powder, water to make dough, a little over 3 tablespoons.

Larger Amount.— $1\frac{1}{2}$ cup flour, 4 $\frac{1}{2}$ tablespoons lard, $\frac{1}{2}$ teaspoon salt, $\frac{1}{3}$ to $\frac{1}{2}$ teaspoon baking powder.

1 cup flour used for the crust make 1 large single shell. Use the larger quantities above for an average sized two-crust pie.

Hot Water Pie Crust, No. 2.

$1\frac{1}{2}$ cups flour, $\frac{1}{2}$ teaspoon salt, $\frac{1}{2}$ teaspoon baking powder, $\frac{1}{3}$ cup fat, $\frac{1}{3}$ cup boiling water.

Sift the flour, baking powder and salt together. Cream the fat, adding the boiling water gradually and beat until light and creamy. Add the dry ingredients, mixing lightly with a knife. When the pastry cleans sides of bowl and forms a ball, turn out on lightly floured board and roll out for pies. This makes two pie crusts or one double crust pie.

PIES WITH SINGLE SHELL BAKED.

Lemon and Banana Pie.

2 Bananas, $\frac{1}{2}$ cupful Orange juice, $\frac{1}{2}$ cupful cold water, 1 cupful sugar, 2 tablespoons cornstarch, $\frac{1}{4}$ cupful Lemon, 2 eggs, $\frac{1}{2}$ teaspoon salt, 4 tablespoons sugar, pastry.

Place the cornstarch, salt, cold water, one cupful of sugar and the Orange juice in top of a double boiler and cook 20 minutes. Add slowly, stirring constantly, the beaten egg yolks. Cook 2 minutes. Cool and add the Lemon juice and one Banana sliced thin. Pour in a baked pastry shell, slice the remaining Banana over the top. Cover all with a meringue made from the stiffly beaten egg whites and the 4 tablespoons of sugar. Place in a 300 deg. F. oven for 15 minutes to set and brown the meringue. Serve cold.

Lemon Prune Pie.

1 cupful cold water, 1 cupful sugar, 2 tablespoons cornstarch, $1\frac{1}{2}$ cupfuls cooked Prunes, 2 eggs, $\frac{1}{2}$ teaspoon salt, 4 tablespoons Lemon juice and grated rind, 4 tablespoons sugar, pastry.

Place the cornstarch, salt, one cupful of sugar, and the water in the top of a double boiler and cook 20 minutes. Add carefully, stirring constantly, the egg yolks, slightly beaten, and cook 2 minutes, stirring to prevent lumping. Remove from the fire, add the Lemon juice and grated rind of one Lemon and set aside to cool. Meanwhile, line the cooked pastry shell with the cooked Prunes, from which the pits have been removed.

When the Lemon filling is cool, pour it over the Prunes and top with a meringue made from the egg whites and the 4 tablespoons of sugar. Place in a 300 degree F. oven for 15 minutes to set and brown the meringue. Allow to cool before serving.

Two Crust Pies.

Apple Pie.

2 cupfuls of sliced Apples, $\frac{1}{2}$ teaspoon salt, 1 cup sugar (about), gratings of nutmeg, and cinnamon, 2 tablespoons cold water, 1 tablespoon butter.

Set the pared and sliced Apples in a plate lined with plain pastry; sprinkle on the salt, sugar, and nutmeg; add the cold water if the Apples cook dry. Otherwise omit it. Add the butter here and there in bits.

Berry Pie.

3 cups berries, $\frac{2}{3}$ cups sugar, $\frac{1}{2}$ teaspoon salt, 1 teaspoon flour, 1 teaspoon butter.

Line a pie plate with plain paste, fill heaping with berries, dredge with flour, salt and sugar, dot with small pieces of butter and cover with top crust or strips of pastry across top. Bake about 45 minutes in moderate oven.

Other fruit pies may be made in the same way.

Deep Fruit Pies.

Prepare the filling as just directed for Apple or berry pies. Bake the pie in a baking dish, individual or large size, omitting the bottom crust. Serve with cream (not whipped). Use same time and temperature as for Apple pie.

Raisin Pie.

Raisin pie is a great favorite. The following recipe is to hand from the Sun Maid Raisin Growers' Association.

Raisin Pie Filler (made with puffed Muscats, bakery type).—20 lbs. puffed Muscat Raisins, 6 lbs. granulated sugar, $\frac{1}{2}$ oz. salt, $\frac{1}{2}$ oz. cinnamon, 4 Lemons (ground fine), 12 quarts water, 12 ozs. cornstarch.

Method.—Mix 11 quarts water with the puffed Muscat Raisins, salt, cinnamon, and ground Lemons. Bring to a boil, then dissolve 12 ounces of cornstarch in one quart water, add to above mix. Boil five minutes. Then add sugar.

This formula can be used by any baker with the slight variation needed to meet the differences in materials and shop conditions.

The Sun-Maid Association further states that the following is one of the best Raisin pie recipes they have ever developed, and they recommend that it be tried out:—

Raisin Pie.

2 cups Raisins, 2 cups water, $\frac{1}{2}$ teaspoon salt, 1 tablespoon cornstarch, 1 teaspoon sugar (may be omitted), 2 tablespoons Lemon juice.

Wash the Raisins, put in saucepan with 1 cup cold water, bring slowly to a boil. Add sugar, salt and cornstarch which has been mixed with the remaining cup of water. Boil slowly for three minutes, remove from fire, add Lemon juice and pour in pie tin which has been filled with crust. Brush top crust with cold milk and bake in moderate oven until brown.

Pie Crust.

$\frac{1}{2}$ cup lard (generous), $1\frac{1}{2}$ cups flour, $\frac{1}{4}$ cup boiling water, salt.

Pour boiling water over lard. Stir until all lumps disappear. Add salt and flour. Mix lightly, do not knead.

The California Fruitgrowers' (Sunkist Citrus) Exchange has issued some valuable recipe books. In one of these the following is stated:—

Pies (if you leave the matter to a vote of men, at least), are quite universally accepted as the most popular American dessert. Both Lemons and Oranges are peculiarly appropriate for use in pie filling because of their own delicious flavors and the readiness with which they may be combined with other fruits, custards and creams. Let your men folk taste one of these.

Deep Dish Orange and Apple Pie.

4 Apples, 2 tablespoons Lemon juice, grated rind $\frac{1}{2}$ Lemon, 2 tablespoons Orange juice, 2 tablespoons finely minced Orange peel, 1 cup sugar.

Peel Apples and cut in thin slices; mix with remaining ingredients and place in deep baking dish. Cover with rich biscuit dough and bake in a moderate oven (350 degrees), 40 minutes.

Orange Filling.

$\frac{1}{2}$ cup sugar, 3 tablespoons flour, $\frac{1}{4}$ teaspoon grated Orange rind, $\frac{1}{4}$ cup Orange juice, 1 tablespoon Lemon juice, yolks of 2 eggs, 1 teaspoon butter.

Mix sugar, flour and grated rind. Add Orange and Lemon juice and beaten egg yolks. Cook in double boiler, stirring constantly, until thick. Add butter, stirring until it is melted, and cool.

Sliced Lemon Pie.

$1\frac{1}{2}$ Lemons, 2 eggs, $1\frac{1}{4}$ cups sugar, $\frac{1}{4}$ cup water, 1 tablespoon melted butter, $\frac{1}{4}$ teaspoon salt.

Grate the rind of 1 Lemon. Peel white part from Lemons and slice the pulp very thin, discarding seeds. Beat eggs until light, add sugar gradually, then grated rind, water, butter, salt and Lemon slices. Bake between two crusts. Put into hot oven (450 degrees). After 10 minutes reduce heat to moderate (350 degrees) and continue baking 30 minutes longer.

Chiffon Pie.

$1\frac{1}{4}$ cups sugar, $\frac{1}{2}$ cup flour, $\frac{1}{2}$ teaspoon salt, $1\frac{1}{4}$ cups boiling water, juice of 1 Lemon, juice and grated rind of 1 Orange, 3 eggs.

Mix sugar, flour and salt; add boiling water, stirring constantly. Cook 15 minutes. Add well-beaten egg yolks, rind and juice of fruit and cook until thick. Cool. Make meringue of the whites of the eggs, $\frac{1}{2}$ cup powdered sugar and 1 teaspoon Lemon juice. Whip one-fourth of meringue into custard mixture and turn into baked pie shell. Cover with remaining meringue and brown in moderate oven.

Lemon Meringue Pie.

1 cup sugar, 3 tablespoons flour, 3 tablespoons cornstarch, 1 teaspoon salt, grated rind 1 Lemon, $1\frac{1}{4}$ cups boiling water, 2 eggs, $\frac{1}{2}$ cup Lemon juice.

Sift dry ingredients, add water and cook in double boiler until thick (about 15 minutes). Add Lemon juice and rind, then slightly beaten egg yolks and cook 2 minutes longer. Cool and turn into baked pie shell. Cover with meringue made by beating egg whites until frothy, adding 4 tablespoons sugar and $\frac{1}{4}$ teaspoon baking powder and continuing beating until stiff. Put into moderate oven (325 degrees) for 15 minutes to brown.

Orange Gelatine Pie.

2 tablespoons granulated gelatine, $\frac{1}{2}$ cup cold water, 2 cups Orange juice, 1 tablespoon Lemon juice, $\frac{1}{2}$ cup sugar, $\frac{1}{4}$ teaspoon grated Orange rind, $\frac{1}{4}$ teaspoon salt, 1 cup cream.

Soak gelatine in cold water 5 minutes, and dissolve over hot water. Add to Orange juice, Lemon juice, sugar, grated rind and salt and stir until dissolved. When beginning to set, stir in whipped cream and beat until stiff. Turn into baked pie shell and chill before serving.

Raisin Pie.

Grater rind and juice of 2 Lemons, grated rind and juice of 1 Orange, 1 cup light brown sugar, 2 cups seeded Raisins, $1\frac{1}{4}$ cups water, 6 tablespoons flour, $\frac{1}{2}$ cup water.

Combine Lemon juice and rind, Orange juice and rind, sugar, Raisins and $1\frac{1}{4}$ cups water and bring to boiling-point. Mix flour with one-half cup water to a smooth paste and add to mixture gradually, stirring constantly. Cook 5 minutes and turn into pie tin lined with crust. Put on top crust and bake in a moderately hot oven (400 degrees), 40 minutes.

Deep Dish Apricot Pie.

$\frac{1}{2}$ lb. Apricots, wash Apricots, $\frac{1}{3}$ cup sugar, pastry to cover, individual pies.

Wash Apricots, cover with warm water and soak until soft, over night if possible. Drain off liquid, add sugar and simmer until a thin syrup is formed. Add the Apricots to the hot syrup. No further cooking is necessary. Fill glass custard cups two-thirds full and cover with pastry. Bake about fifteen minutes in a hot oven. Delicious hot or cold, with or without whipped cream. Will serve five or six persons.

And here's a letter from Jas. Reade Watson, Old Cabin Home, Guerneville, Calif.

Dear Mr. Boardman,

In the Pacific Rural Press, John Pickett prints your praise of the American fruit pie that you ate while here—restaurant pie. He suggested that his readers write to you, and hence I take this liberty.

The pies served in restaurants in this State are generally from a "pie foundry." The fruit filling is "pie fruit," which they buy in gallon cans. It is cull fruit, or some inferior variety put up in a canning factory.

My favorite fruit pies are made by neighbor's wife. The crust of her pie is thin and flakey, never tough or leathery. To mix cold water, lard and flour into such a dough as hers seems a God-given gift. When company comes unexpectedly, she generally makes a pie. While she is preparing the dough and rolling it out and placing it in the pie pan, the small boy goes to the berry patch or to the Peach orchard and gathers the fruit of superior quality and proper ripeness. This fruit, freshly picked, goes into the pie, which is put at once into a hot oven. When properly baked you have indeed a culinary triumph.

Of course, a proper amount of sugar is added to the fruit before baking. All the bramble type of berries, including Blackberries, Dewberries and Loganberries should be handled as I have described, as well as Peaches, Apricots and some varieties of Apples—those easiest to cook are Red Junes, Gravensteins, and Newtown Pippins. Even the best of cooking Apples should be sliced quite thin or chopped in small pieces to hasten their being cooked.

It would be an insult to honest Strawberries to bake them in a pie. It is never done in the 100 per cent. American families. Strawberries should be made into a genuine, honest-to-goodness "short cake."

A proper amount of salt, three tablespoonsful of lard or lard substitute, a quart of flour, and two teaspoonsful of baking powder should be thoroughly mixed with sweet milk to make a dough as moist as can be rolled out on a well floured bread board. Roll the dough about one-half an inch in thickness, work fast and put into a hot oven to bake.

The Strawberries sweeten to taste and mash in a bowl till a smooth mass of juicy pulp. When the cake is done, split it open while still hot, into two evenly divided parts and butter each separately, right generously. Place them in a platter and pour the mashed Strawberries over the "cake" as a sauce.

This is the orthodox short-cake of the South and West. To serve the dried-out "sweet cake" with a sauce of mashed Strawberries, as they do in some restaurants run by off-color Europeans, and call that "short-cake," is an infamous libel to one of America's most cherished institutions.

I suppose you will be flooded with letters in reply to your inquiry, but I could not resist the temptation to assume the roll of schoolmaster, too, and add my bit.

But, being a mere man, how do I happen to know of these things? One reason, I want to know of people and of things I like best! and besides, during the "late unpleasantness" I was responsible for the training of mess officers, mess sergeants, and cooks and bakers of the 39th Division of the U.S. Army.

Very truly yours,

Jas. Reade Watson.

Prevention of Black Spot Infection

Seasonable Hints for Apple and Pear Growers

(By P. H. Thomas, Chief Horticulturist, Tasmanian Department of Agriculture.)

THE PRESENT INDICATIONS for the coming season's Apple and Pear crop are particularly good. Most varieties are showing promise of a good fruit bud development, and given satisfactory climatic conditions at the blossoming period a material increase in yields over last season should result.

In the North the rainfall during the late winter months has been much in excess of that experienced in Southern districts, and owing to this cultural operations are not so forward.

From the enquiries received it is evident that the majority of growers are alive to the importance of the early preventive treatments applied to prevent black spot infection, and a large number are following the Departmental recommendations, based on the experimental work that has been conducted. At present the "green tip" spray is being generally applied. This is put on just as the buds are unfolding and the encircling leaves are well visible. The spray recommended is Bordeaux 6-4-40 formula, which can at this stage be applied to all varieties.

During October the majority of the Apple varieties will reach the "pink stage" of bud development, the individual blossoms having separated in the cluster, showing the pink tinge previous to the petals opening. At this period either lime sulphur (1-30) at 32 deg. Beaume test or Bordeaux 4-4-40 can be applied, the latter treatment being preferable under conditions conducive to the development of the disease; the formula being reduced to 2-2-40 when applied to tender skinned varieties. Under normal conditions the treatments detailed will prevent early infection of embryo fruits and foliage.

Should heavy rains and excessive humidity be experienced during November and December, it is necessary to apply further sprays of lime sulphur (1-60) or Bordeaux, 1-1-40, to prevent late infection.

When applying these sprays, it is

advisable to continue with the same spray that has been applied at the "pink stage" at the reduced strength.

Experiments recently carried out have shown that under certain climatic conditions (e.g., very hot, sunny days, or previous to a spell of cold, wet weather), there are risks of injury to fruit and foliage when lime sulphur is combined with arsenate of lead. Bordeaux is the much safer spray to use in combination with arsenate, but it is inclined to create a russetting, especially on tender-skinned varieties.

WEST TAMAR.

Mr. Norman H. Vincent, of Glen-garry, W. Tamar, reports under date September 20:—

At the time of writing everything points to a good crop of Apples; the fruit buds are swelling fast, and appear to be strong and healthy in most orchards.

Several orchardists on the Tamar report that the W. Coles and Josephine Pears are not going to be a good crop.

This season, orchardists generally are giving their orchards early attention with regard to ploughing, and also with regard to a late dormant or green tip spray for black spot. I might also add that most orchardists are manuring this season, generally with a complete manure; some are again using nitrophoska; this manure gave very good results last season.

The weather of late has been very dry, and growers have had to push along with their ploughing.

With regard to my own spraying programme, I always give a late dormant or green tip spray of 4-4-40 Bordeaux, followed by lime sulphur, 1-20 to 1-30, according to weather, in the pink on most varieties.

Cleos., Sturmers, and Delicious may get 4-4-40 in the pink instead. I have always added lime sulphur to the first arsenate of lead (Cooper's ar-

sinette), at the rate of 1-80, and so far have been very successful, not having had much black spot in any season.

From all reports, it would appear that the American crop is light, and I am told it particularly refers to the boxed Apple areas on the Pacific Coast (Australia's and Tasmania's chief competitor). This means a great deal to Australian Apple-growers, and should prevent many from becoming panic-stricken and selling at very low prices, which is often the cause of low prices being created overseas.

October will be the trying time for orchardists, and at present it is impossible to forecast, although with good seasonal conditions, crops should be good.

Victoria

FRUITGROWERS' COOL STORES' ASSOCIATION.

Fruit and Flower Show Proposed for Next April.

A SPECIAL meeting of the Victorian Fruitgrowers' Cool Stores' Association was held at Melbourne on September 27, Cr. W. Mock presiding.

To improve the distribution of fruit in Victoria, a Committee was appointed to go into details and report further.

A letter was received from the Department of Markets and Transport, giving details of fresh fruit importations into China: prices, 9/- to 11/- per case.

Mr. J. H. Lang said the difficulties of securing a market in China for Australian Apples were almost insuperable. No action taken.

Fruit and Flower Show.—The sub-committee reported favorably on the idea of holding a four-days' fruit and flower show in the Melbourne Town Hall next April. Such a show, it was thought, would not only pay its way and show a profit, but be a most desirable method of advertising fruit. It was decided to ask cool stores to contribute at the rate of 5/- per 1,000 case space to provide the initial funds.

EXPORT OF AUSTRALIAN FRUIT

British Preference, Eastern Markets, German Tariff.

Pear Export.

IMPROVEMENTS in relation to relation to fruit export items are earnestly sought by the Tasmanian Farmers, Stockowners, and Orchardists' Association. Resolutions carried at a recent conference of this Association, which have been conveyed to the Prime Minister, are as follows:—

"That this Conference strongly urges the Prime Minister of Australia to approach the next Imperial Conference in Great Britain with a view to giving preference on Empire fruit imported into the United Kingdom by a protective tariff of, say, 5/- per cwt. on all fruit from outside the British Empire, and also strongly urges that if the said preference be granted all necessary precautions be taken to prevent exploitation of fruit being sent through British possessions other than fruit grown in the British Empire."

It is understood that the Rt. Hon. S. Baldwin, when Prime Minister of Great Britain, just previous to the first Labor Government in Great Britain, suggested a protective tariff on all fruit from outside the British Empire, but unfortunately the Imperial Conference at that particular time did not take advantage of Mr. Baldwin's suggestion.

It is respectfully urged that the foregoing resolution will receive the most serious and favorable consideration of the Prime Minister, and that every effort be made to urge the Imperial Government to give that desired protection to fruit produced within the Empire.

In the event of the Imperial Government giving preference to Empire fruit, the Commonwealth Government could reciprocate to the same extent by giving Great Britain preference on manufactured goods imported from the United Kingdom.

Eastern Markets.

"That Conference again strongly urge upon the Federal authorities to seriously consider the advisability of appointing a delegation to investigate and report upon the possibilities of extending Australian trade in fresh, dried, and preserved fruits, and other products in Eastern countries, viz., China, India, Japan, Java, and Malay States."

Statistics issued from time to time by the Department of Markets and Transport, show the importations of fresh, dried, and preserved fruits and other commodities, etc., into Eastern countries, from which it will be seen how vast those importations are, and yet Australia's share is practically negligible.

There is a wide field of trade in the East to be exploited, and the Commonwealth Government is respectfully urged to give the most

the U.S.A. Government, with regard to fruit importations into Germany."

Recent German market reports are to the effect that Australian Apples are difficult to sell, buyers preferring American Apples, which only pay a duty of 1/4 a case, compared with the duty on Australian Apples of 2/9 a case.

This is a matter which could well receive the favorable attention of the Federal Government.



Unloading American barrelled Apples at Hull.

serious consideration to the foregoing resolution, with a view to giving effect to the recommendation contained therein.

German Tariff—Favored Nation Clause.

"That this Conference strongly urges the Minister for Markets and Transport to make every effort to come to an agreement with the German Government in connection with the 'Favored Nation Clause' of the German tariff, as was agreed upon between the German and New Zealand Governments, and also

Apple Crop Lighter in U.S.A.

The Oregon and Washington (U.S.A.) boxed Apples are the ones which mostly compete in England against Australian and New Zealand fruit.

In the 1929 season the Oregon Apple crop is 50 per cent. less than last year, and the Washington commercial crop is estimated at 24,300,000 bushels in 1929, as compared with 30,000,000 bushels in 1928.

Apple and Pear Export.

VICTORIAN PEARS.

Recent Shipments.

ACCORDING to a report by the Trade Commissioner, received by the Minister of Agriculture (Mr. Pennington), from the Victorian Agent-General in London, the s.s. "Orama" started to discharge her 7,156 packages of Victorian Pears at Tilbury Dock on June 6. The fruit arrived in good condition, and the following prices were realised:—

	Cases.	Half-cases.
Winter Nelis . . .	18/- 26/-	8/- 15/-
Josephine . . .	19/- 25/-	8/- 15/-
Winter Cole . . .	15/- 24/-	8/- 9/-
Madame Cole . . .	16/- 23/-	

Packham's		
Triumph . . .	18/- 23/-	9/6 12/-
Vicars	14/-	
Beurre Bosc . . .	20/- 24/-	10/6 12/-
Lawrence	15/- 18/-	
Keiffers	17/-	8/- 9/-
Black Achan . . .	12/-	
L'Inconnue	12/- 13/-	6/- 8/-
Le Conte	13/-	
Glou Morceau . . .		8/-
Broom Park		6/-
Doyenne du		
Comice	13/-	

In the report it is stated that two growers used dump cases, and the boxes had a very dirty appearance. Another lot was packed in white Canadian cases with cleats top and bottom, and wire bound and very neat stencilling. This made a good clean business pack, and was greatly admired.

It is pointed out that the 2½ inch Pears of two growers were slack packed, and that cases should be well filled and properly graded if growers want high prices.

There was a certain amount of sweating owing to the temperature not being raised on approaching London, and those cases which had corrugated cardboard took much longer to dry out than those with wood wool.

It is considered that there is a certain amount of risk in the Canadian bushel boxes for Josephines. This variety is a first-class Pear for the London market, but should be packed in trays. A very good package would be the same class of box cut into three, with cleats top and bottom of each tray, the three trays being bound together by wire.

Suitable Pears for the cases would be the cheaper varieties, such as Vicars, Napoleons, Broom Park, Keiffers and Beurre Clairgeau.

The s.s. "Comorin" started to discharge at Tilbury Dock on June 3, and opened her fruit chambers on June 4. The 1,393 packages of Victorian Pears arrived in fine condition, and realised the following prices:—

	Cases.	Half-cases.
Josephine	20/- 23/-	
Beurre Bosc . . .	22/- 23/-	12/-
Packham's		
Triumph	21/- 22/-	12/-
Keiffers	17/- 18/-	8/- 8/6
Vicars	13/- 15/-	
Broom Park . . .	14/-	
Madame Cole . . .	15/-	
Winter Cole . . .	15/- 20/-	
Black Achan . . .		6/- 12/-
Winter Nelis . . .		8/- 10/-

VICTORIAN PEARS IN LONDON.

In a report received by the Victorian Minister of Agriculture (Mr. Pennington), from the Victorian Trade Commissioner in London, the s.s. "Hobson's Bay" discharged her 564 packages of Victorian Pears, at King George V. Dock, on June 20. The Pears were carried in a special chamber, and the following prices were realised:—

Winter Cole, 12/- to 19/9 per case; L'Inconnue, 15/- to 18/6; Winter Nelis, 22/- to 30/-; Packham's Triumph, 22/- to 28/-; Vicars, 10/- to 17/-.

The Winter Nelis Pears arrived in the best condition.

APPLE AND PEAR SHIPMENTS. 1929.

The Season Reviewed.

AN INTERESTING SUMMARY of the Apple and Pear shipments from Victoria is to hand from Esmond Russell Pty. Ltd., of Melbourne. In this review the firm points out that as so few Apples were sent, they have merely given the average for each variety.

Practically speaking, there were only two Apple boats, one mid-February, and the other early April. The general average price of 13/3, while poor in comparison with extraordinary local prices, was very good when the huge quantities of American Apples still selling in England is considered, the net return at this figure working out at 7/6 per case on the pier, Port Melbourne. Granný Smiths again proving themselves by topping the general average by over 3/-.

Pears.—The figures in regard to

Pears will be of more general interest, covering as they do eight boats, exclusive of the "Mongolia." The top prices realised show what good reliable packs can do, and the general average for all boats and all varieties at 19/- per bushel case will give a net return of 12/11½ on the pier, Port Melbourne, a truly wonderful result when it is remembered that this figure includes Keiffers, Vicars, etc., as well as the better varieties. However, these figures exclude the "Mongolia," as it is believed a claim will be collected as compensation to the grower on this steamer's fruit.

Charges of transport and selling have remained unchanged from last season, and are as follows:—

London.—Ocean freight, 3/6 per bushel; commission, 5 per cent., 11½d.; landing and delivery, 1/-; advertising and insurance, 1½d. Total, 5/7.

Melbourne.—Forwarding and supervision, 4d.; stevedoring, etc., 1½d.; exchange, average 3½d.—5½d. Total 6/0½.

Leaving net on the wharf, Port Melbourne 12/11½ per bushel case, off which growers have only to deduct railage to port, to arrive at the figure as on rails at local station. With Apples, the charges are the same, except that commission is 5 per cent. on 13/3 instead of on 19/-, or 7½d. instead of 11½d. Allowances must be made for extra freight, etc., on Pears packed in half-cases and trays.

Average Price Pear Shipments, 1929.

Mooltan (sailed 12/2/29).—Williams, cases, 24/1; Howells, half-cases, 11/5.

Jervis Bay (sailed 27/2/29).—Howells, cases, 17/10; half-cases, 9/9; B. Bosc, cases 21/3, half-cases 13/-; Vicars, cases 12/-; B. de Cap, cases 15/-, half-cases 7/10; Keiffers, cases 11/-; B'Anjou, half-cases 13/1.

Maloja (sailed 13/3/29).—Packhams, cases 17/5; Comice, cases 35/-.

Mongolia (sailed 26/3/29).—All condemned. Claiming on shipping company.

Orford (sailed 3/4/29).—B. Bosc, cases 20/-, half-cases 7/9, trays 6/4; Packhams, cases 21/6; Winter Cole, cases 16/2, half-cases 8/-; Keiffers, cases 13/-, half-cases 7/6; Josephines, half-cases 11/6; Broom Park, cases 12/2; B'Anjou, half-cases 6/7; B'Claig, half-cases 7/6; B'Achan, half-cases 6/2; Bergamot, half-cases 6/2.

Moldavia (sailed 9/4/29).—B. Bosc, trays 7/9; Packhams, cases 20/2; Winter Nelis, cases 21/-, trays 7/-.

Oronsay (sailed 16/4/29).—B. Bosc, cases 20/-, half-cases 10/3, trays 7/1; Packhams, cases 18/-, half-cases 9/3;

W. Cole, cases 15/4, half-cases 8/-; Winter Nelis, cases 20/4, half-cases 11/-, trays 6/7; Mde. Cole, cases 15/-; Keiffers, cases 14/-, half-cases 7/8; Josephines, cases 22/3; Broom Park, cases 13/3, half-cases 7/-.

Orama (sailed 30/4/29).—B. Bosc, cases 21/10; Packhams, cases 19/5, half-cases 11/1; Vicars, cases 14/-; Winter Cole, cases 15/6, half-cases 8/2; Winter Nelis, cases 21/5, half-cases 12/2, trays 7/4; Mde. Cole, cases 16/4; Lawrence, cases 16/2; Keiffers, half-cases 8/2; Josephines, cases 20/5, half-cases 10/9; B'Claig, half-cases 8/-.

Hobson's Bay (sailed 8/5/29).—Packhams, cases 23/11; Vicars, cases 11/5; Winter Nelis, cases 24/9, trays 7/9; L'Inconnue, cases 17/5.

Average Price.—Howells, cases 17/10, half-cases 10/4; B. Bosc, cases 20/10, half-cases 12/2, trays 7/5; Packhams, cases 20/3, half-cases 9/11; Vicars, cases 11/10; B. de Cap, cases 15/-, half-cases 7/10; Winter Cole, cases 15/10, half-cases 8/-; Winter Nelis, cases 22/11, half-cases 12/1, trays 7/2; Mde. Cole, cases 15/7; Lawrence, cases 16/2; Keiffers, cases 13/4, half-cases 7/8; Josephines, cases 20/9, half-cases 11/5; Broom Park, cases 12/5, half-cases 7/-; Comice, cases 35/-; B'Anjou, half-cases 11/7; Williams, cases 24/1; B. Claig, half-cases 7/8; B. Achan, half-cases 6/2; Bergamot, half-cases 6/2; L'Inconnue, cases 17/5.

Average price, all varieties, all boats—cases 19/-, half-cases 9/1, trays 7/6. These average prices include the price obtained for fruit arriving in unsound and damaged condition.

Season's Top Prices.—Howells, cases 19/-; half-cases 13/-; B. Bosc, cases 24/-, half-cases 14/-, trays 8/6; Packhams, cases 28/-, half-cases 12/-; Vicars, cases 17/-; B. de Cap, cases 16/-, half-cases 10/-; Winter Cole, cases 18/-, half-cases 9/-; Winter Nelis, cases 30/-, half-cases 15/-, trays 10/-; Mde. Cole, cases 18/-; Lawrence, cases 18/-; Keiffers, cases 14/-, half-cases 9/-; Josephines, cases 24/-, half-cases 14/-; Broom Park, cases 14/-, half-cases 7/-; Comice, cases 35/-; B. Anjou, half-cases 16/-; Williams, cases 26/-; B. Claig, half-cases 8/-; B. Achan, half-cases 8/6; Bergamot, half-cases 7/-; L'Inconnue, cases 18/-.

Apples.

Average Price (exclusive of Mongolia).—Jonathans, 11/10; Reinnettes, 10/4; Shoreland Queens, 9/10; Cox's O.P., 9/-; London P., 12/10; Rome Beauty, 13/-; King David, 11/-; Statesman, 13/4; Granny S., 16/4; McIntosh, 10/4.

Average price, all varieties, all boats, 13/3. Owing to the small quantity of Apples exported, the two boats are not shown separately.

The past seven years' averages, all varieties, all boats, for Apples are

now as follows:—1923, 11/11; 1924, 12/9; 1925, 15/7; 1926, 9/4 (London dock strike year); 1927, 20/7 (thrip year); 1928, 10/5; 1929, 13/3.

Average of seven years' averages, 13/5.

American Fruit Crops for 1929.

Apples, Lighter than Last Year.

Further detailed information is to hand regarding the 1929 crop of fruit in U.S.A. The "American Fruit-grower Magazine" reports in its issue of August 1 as follows:—

The crop of tree fruits seems to be light in nearly all parts of the country, according to official reports based on July 1 condition. In comparison with the fairly good fruit crops of last season, Apples and Pears seem likely to show a reduction of one-sixth; Grapes, Oranges and Lemons, a reduction of one-fourth; Peaches and Grapefruit, a reduction of nearly one-third; and California Prunes, a reduction of more than two-fifths. Apricots, Figs and Olives seem to be the only important fruits that will show a production approaching or exceeding that of last year.

General Crop Conditions.

Apples.—The prospective total production of Apples in 1929 is 154,300,000 bushels, which would be about 17 per cent. less than the 1928 crop, but one-fourth more than the 1927 production. Prospects are particularly unpromising in some of the important commercial States, but the general shortage of fruit supplies this year is expected to result in rather close utilisation of the Apple crop. Production of Apples doubtless will be considerably below the recent five-year average for this fruit.

The commercial crop is indicated as 29,900,000 barrels, compared with about 35,300,000 last season and a five-year average of about 32,500,000 barrels.

Many Apple Trees Removed.

In 12 of the last 15 years, the average farm price of Apples has been below the general pre-war wholesale price level of all commodities. As a result, millions of Apple trees have been removed and others have been neglected. From 1910 to 1925 the number of Apple trees in the United States decreased nearly 40 per cent., but production has been practically maintained, according to the Apple survey of the Department of Agriculture. A marked tendency toward the

concentration of commercial Apple orchards in the more favorable sections and a gradual elimination of unprofitable orchards are reported. These tendencies are accompanied by a drift toward the concentration of production of fewer varieties.

Roadside markets are expanding rapidly in many States. A chain of roadside markets is being established in Du Page County, Inninois, for the purpose of selling Southern Illinois fruit and produce direct from producers to Chicago motorists. The plan is to establish one central year-round roadside stand with adequate facilities for receiving, holding and distributing carloads of fruits and vegetables. Eight smaller stands are to be built on the nine important hard roads leading west from Chicago, to be operated in the fruit season. Apples, Peaches, Pears, berries and other fruits and vegetables, especially those produced in Southern Illinois, will be shipped in iced cars direct to the central roadside stand, where they will be re-distributed much as chain stores handle produce. The possibility is considered of shipping by motor truck, so that fresh fruit will be available the following morning with but one handling.

Prospects in Canada and England.

Canadian blossom prospects were most encouraging for an average to good crop of fruit for the 1929 season. The blossoming of Apples was the heaviest in years in the eastern provinces, especially in Nova Scotia, which now promises a record crop. Conditions in British Columbia from a blossom standpoint were promising. It is believed that some varieties will be patchy, but an outturn of about 75 per cent. of the crop of 1928 is expected. The 1928 crop was very heavy, however, and this year's crop should about equal the demand.

Apple prospects in England at the beginning of July varied from light to good. Of the culinary Apples, Lane's Prince Albert were expected to be good, while Bramley's Seedling and Newton's Wonder were generally

Fruitgrowers are Organising

light. Damage from sawfly has been reported in Kent and Essex. The outlook for dessert Apples was good for Worcester Pearman, Beauty of Bath, and Allington Pippin, but Cox's Orange Pippin is light. The Pear crop in England is variable. The set was fair, but considerable dropping was reported.

Trade reports on the condition of the Apple and Pear crops of Continental Europe indicate that Apple production will be generally medium to good and above the poor crops of last year, with the exception of crops in Austria and the Italian Tyrol, while Pears are reported good with the exception of those in Germany and Czechoslovakia. It was still too early to make very definite forecasts of the crops, as weather conditions will greatly influence the final outcome. Frosts caused some damage, but largely to Pears and in most cases only locally.

The two States which particularly affect Australian and N.Z. Apple export are Oregon and Washington (U.S.A. Pacific Coast).

Oregon.—Hood River Apples are expected to be a very short crop, probably not more than half of last year.

Washington.—The commercial pack for 1929 is forecast at 24,378,000 bushels, as compared with 30,000,000 bushels for 1928.

CALIFORNIAN PEACH AND PEAR CROPS.

THE CALIFORNIAN PEACH CROP for 1929 is estimated (August 12) at 303,000 tons, compared with 618,000 tons in 1928 and 492,000 tons in 1927.

Clingstone Peaches are forecast at 162,000 tons. In 1928 the total production of clings was 414,000 tons, of which 322,000 tons were canned, 22,000 tons utilised fresh, and 70,000 tons not harvested. The Tuscans are about all harvested, and the canning of early midsummers is being started. There is much pit splitting, thus reducing the grades.

The total production of freestone Peaches is forecast at 141,000 tons, compared with 204,000 tons in 1928. Much pit splitting in Elbertas.

A big Apple crop is expected in Tasmania; growers are thinning the buds, and will doubtless thin out the fruit when it forms.

SOUTH AUSTRALIAN FRUIT MARKETING ASSOCIATION.

Estimated Export, 400,000 Cases.

THE monthly meeting of the executive meeting of the South Australian Fruit Marketing Association, was held on September 2. There was a satisfactory attendance of delegates.

The Shipping Sub-committee reported that as a preliminary estimate based on figures for past seasons, South Australia should require space in the coming season for 400,000 cases of Apples and Pears.

It was suggested that the first Apple ship from South Australia should be on February 27, 1930, and that the seasons' shipment should close on May 15, 1930. During this period there would be about 25 boats.

An indication was also given of the allocation to the various overseas ports, but these figures may be considerably altered when the position of the c.i.f. sales are known.

The Growers' Sub-committee reported having held a meeting, at which Mr. G. Quinn, the Chief Horticultural Instructor was present, and the question of cases, packing, and fruit inspection, was discussed at length, and the recommendations decided upon are being drafted into a complete report for submission to the Executive Committee.

The question of the appointment of inspectors, and the manner in which their services should be utilised, was discussed at length, and referred to the next meeting.

It was decided that it was desirable for the Association to have a "hallmark" of quality, for use by its members, if they desire. The form of "hallmark" to be used, and the necessary conditions under which its use will be permitted, will be decided later.

A letter received from the Australian Oversea Transport Association in regard to a request to be made to the Federal Parliament, asking that the Industries Preservation Act be amended, to allow of agreement being entered into between regular shipping lines, and shippers; was referred to the shipping sub-committee, who were authorised to obtain additional information, and were empowered to act as they considered desirable in the best interests of the Association.

VICTORIAN FRUIT MARKETING ASSOCIATION.

Successfully Launched at Big Meeting.

AT a big meeting of Victorian fruitgrowers and exporters, held at Melbourne on September 27, the Victorian Fruit Marketing Association was successfully launched, and a constitution adopted.

Mr. H. G. Colombie, who presided, said the organisation was entirely voluntary, and growers had absolute freedom to decide how and where to market their fruit.

The Minister for Agriculture (Mr. Pennington) wished the Association every success. By better grading and labelling the market in England could be extended.

Mr. E. J. Mulvaney, a member of the Development and Migration Commission, spoke of the steady improvements in the grading of Australian fruit. Australian canned fruit was successfully competing with Californian canned fruits in England.

Careful attention was paid to the details of framing the constitution: this provided for the freedom of growers to vote effectively on matters of policy. For the purpose of electing growers' representatives on the Executive Committee, the State was divided into districts, as follows:—Mornington Peninsula, Gippsland, Metropolitan, Harcourt and district, North-Western district, Western district; the first four mentioned districts to have two delegates each, and the other districts one delegate each. This was deemed to be a fair basis of representation, and amendments could be made subsequently as found necessary.

It was agreed to authorise a levy of 3d. per bushel case, to be contributed equally by grower and exporter on fruit shipped in the 1930 export season.

"Canadian" standard cases are being largely used for the export of fruit from Victoria in the coming season. These will have the correct bulge; the cleat at the sides ensures good ventilation.

Softwood cases and colored labels were used successfully at Bagdad, Tasmania, last season.

Apples in Cold Store.

Success With Oiled Wraps.

(To the Editor, "Fruit World.")

Sir,—With reference to the remarks of Mr. J. H. Lang, as reported by you on page 329 of the September "Fruit World." We received a great deal of helpful advice from Mr. Lang in 1922, prior to the opening of our first cool stores. In connection, however, with the Granny Smith variety, we find that delayed storage, whilst minimising the occurrence of scald, did not prevent same, and in 1923 a large percentage of Granny Smith Apples were affected. In 1924 we imported oiled wraps from America, and stored all our Granny Smiths in these wraps, and at the same time commencing experimental work, which we subsequently carried out over a period of four years.

In these experiments, Granny Smith Apples were placed in store in oiled wraps, in plain wraps, and unwrapped, and examined at different periods. Since scald in this variety is very seldom apparent when the Apples are first removed from cool store, it was necessary to examine the Apples: (1) on removal from cool store; (2) at the end of five days after removal, and (3), at the end of ten days after removal.

The experiments conclusively proved that when placed in oiled wraps, complete immunity from scald in this variety can be obtained, as not the faintest sign of it develops.

With the Apples in plain wraps, or unwrapped, anything between 50 and 80 per cent. of scald may be expected at the end of a five to ten-day period after removal from store in any Apples which have been held a considerable time.

We store here each season from 10,000 to 20,000 odd cases of Granny Smith Apples, and 95 per cent. of these are wrapped in oiled wraps before being placed into store. When being taken out of store the Apples are, of course, re-packed.

It is difficult to understand why the oiled wrap has not come into greater use in Australia. Its extra cost is very little, and whilst it may not be effective in preventing the soft scald of the Jonathan, it is certainly very effective with the Granny Smith, which, with us, is the only variety that develops any scald (of commercial significance) in store.

We have heard it said by a good many people in the trade, that the Granny Smith, when stored in Sydney, does not develop scald. On the other hand, we know of a great many cases in which it has occurred badly, and have frequently noticed this variety on display in retail shops, badly affected with scald. The owner or the storer of the Apple may not be aware of this, since it is very rarely that the slightest sign of scald is seen on the Granny at the time of its removal from store. It is, however, what happens to the Apple after it has been cool-stored that matters, and since this variety probably represents one of the best commercial Apples in the world, spending an extra 2d. or 3d. per case to ensure that it reaches the consumer in perfect condition, is well worth while.

In the use of oiled Wraps, we have followed American specifications, and have stipulated that the wraps

is to pick in April and place into Store in June, sometimes July, for the reason, that the space is generally not available before this time.

Remarks are often heard, particularly when referring to the skin discoloration, known as scald, on the Granny Smith or other green-colored Apples, that the Apples have had a "touch of the ice." The inference of course, is that same have been held at temperatures which have been too low.

It has been definitely proved by experimental work in America, conducted by the Department of Agriculture, and also by the experimental work conducted by Mr. D. B. Adam, in Victoria, that less scald occurs when Apples are stored at the lower temperatures, such as for instance, 30-32 or 32-34 degrees F., than when held at higher temperatures, and further, that whilst ventilation has



Grading and Packing Apples.

have contained 18 per cent. by weight of an odorless tasteless mineral oil. There are various indent firms who supply these wraps, and it is also possible to obtain them from some of the local manufacturers. We would not think of placing a Granny Smith Apple in cool store unless in oiled wraps.

Provided these latter are used it is not very material whether the Apple is stored immediately after picking, or whether it is delayed for a month or more. Our practice here

an effect, it is not practicable in a commercial store to decrease the amount of scald by increasing the ventilation. The oiled wraps, however, provide a cheap and sure method of preventing loss by scald in the variety referred to.—Yours faithfully,

The Batlow Packing House and Cool Stores Rural Co-operative Society Limited,

H. S. SMITH,
General Manager.

Batlow, N.S.W., 17/9/29.

Dried Fruit News.

AUSTRALIAN DRIED FRUIT.

Overseas Sales Heavy.

Heavy clearances of Australian dried fruit continue in the British market. During the week ending September 19, 3,403 tons realised £140,900, and comprised 2,671 tons Sultanas, at an average price of £41/11/-; 623 tons Currants realising £41/16/-, and 109 tons Lexias, £36 per ton.

Sales in Great Britain to date from the 1929 harvest total 20,216 tons, against shipments to date of 42,152 tons.

The statistical position is as follows:—

	Shipped.	Sold.	Balance.	Average.
Sultanas	28,552 ..	12,224 ..	16,328 ..	£43 8 6
Currants	11,430 ..	7,582 ..	3,848 ..	44 15 4
Lexias..	2,170 ..	410 ..	1,760 ..	38 18 9
	42,152	20,216 ..	21,936 ..	

Value of sales to date, 1929, £886,125/12/3.

The demand during the past two weeks for Sultanas is the direct result of adverse reports regarding Turkish and American crop prospects, and it is probable that a steady demand may continue for a week or two pending fuller information from these markets, especially with the seasonal demand for dried fruit generally. The weekly oftake in Great Britain averages 1,000 tons Currants and slightly below 1,500 tons Raisins. This consumption is more marked during the next few weeks.

The Commonwealth Export Control Board regards with considerable satisfaction the steady and progressive flow into second hands of the Australian Currant shipments some 2,734 tons having been taken up over the past six weeks. This is important in view of the advent of the Greek new season's harvest. As, however, the unsold balance of Australian Currants is under 4,000 tons confidence is felt that this quantity will move steadily from first hands during the next two or three weeks.

Austral Rotary Cultivator.—This new invention has created interest among producers. It is particularly to be noted that the implement is strong and practically without wearing parts. Demonstrations were given at the Royal Agricultural Show. Full particulars are obtainable from the Austral Rotary Cultivator Co., May-street, Hampton, Melbourne.

DRIED FRUITS BILL.

Debate in South Australian Parliament.

Permanent Control Opposed.

THE debate on the second reading of the Dried Fruits Bill is proceeding in the South Australian Parliament. The Bill seeks to re-enact the present control legislation.

A petition has been presented, asking for the control to be permanent and not for a limited period.

From the tone of the debate during late September, it appears that the Bill will be carried in the House, but amendments are proposed to give the Act a limited life, and to relax certain rigid features.

Mr. Hamilton said he would support the Bill, because he could not see any way of avoiding it. He would vote for the Bill under protest, and hoped the industry would soon be on a more solid foundation.

Mr. Macmillan strongly supported the Bill.

Mr. Hannaford preferred referring the subject to growers by referendum to find out exactly what they wanted. The control system was costly. The cost of the Dried Fruits Board over a period of five years had been £21,476. For the present year the cost of the State and interstate levies was £7,933. There was also a charge of £1 a ton on Currants exported overseas. Altogether he estimated the total levies on Sultanas and Currants for this year would represent about £85,333, and the total cost to the fruitgrowers of Australia would be over £100,000. He thought the local consumption could be greatly increased by lower prices, and was told that much of the fruit sent overseas was piling up in London and that it was possible in the near future that much of it would not return growers more than £18 or £20 a ton. He would vote for the amendments indicated.

Mr. Crosby said he was not satisfied that control was the right thing over the years. His amendments would limit control to five years, and would exempt certain dealers from registration, i.e., any person who bought from a grower only such quantities of fruit as were reasonably required for personal or household consumption.

Mr. Hudd said a good case for per-

manent control had been made out in the petition to the Premier. He noted Alexandra growers had withdrawn their opposition to the Bill, though they objected to its being permanent, as the value of their properties would thus be depreciated. When in London last year, he (Mr. Hudd) was informed that Sir Henry Barwell and the Trade Commissioner (Mr. Lewis) both believed the Federal Control Board appraisal system was unsatisfactory and buyers took dried fruit from other countries rather than submit to the Australian methods.

Mr. Nicholls said some growers were critical, others were in favor of permanent control. Other primary industries, such as wheat and wool, needed a control system to give each grower a percentage of the demand in the local market.

The difference between what the grower got and what the consumer paid for dried fruit was too great. It should be possible to reduce the price to the consumer without reducing the price for the grower. Growers' minds were confused as to the costs of control. Some thought the Board was costing £80,000 a year: the Minister had stated, however, that the cost was about £21,000 since its inception, plus salaries of inspectors, £4,800. By advertising the food values of dried fruits more could be sold.

CALIFORNIAN GRAPE CROP.

Smallest Since 1924.

FROM PRESENT INDICATIONS the 1929 Californian Grape crop will be the smallest since 1924, writes Mr. E. E. Kaufman, Agricultural Statistician, California Department of Agriculture, on August 12.

The Raisin Grape production is forecast at 28 per cent. less than the crop produced in 1928; table Grapes, 24 per cent. less; and wine Grapes, 13 per cent. less. Recent plantings have been small and not large enough to maintain the acreage. As nearly as can be estimated, 20,270 acres of vines of all varieties were removed last winter and spring. As a result, the 1929 bearing acreage of all Grapes is estimated at 639,927 acres, compared with 653,483 a year ago.

The August 1 condition of wine Grapes indicates a production of approximately 420,000 tons. This may be compared with 482,000 tons produced in 1928, of which 18,000 tons were not harvested. Two years ago the crop amounted to 473,000 tons. Plantings of Grapes of wine varieties the past few years have been more than sufficient to maintain the bearing

acreage. Although there was some acreage removed the past winter, it is estimated that there are in bearing this year 180,891 acres, compared with 176,187 acres in 1928.

The total production of table Grapes is expected to be about 361,000 tons. Last year the crop amounted to 478,000 tons, of which 75,000 tons were not harvested. In 1927 there were about 142,000 tons left unharvested out of a crop of 490,000 tons. All leading varieties promise somewhat lighter yields than a year ago. Malagas and Tokays, from present indications, are shorter than Emperors. Plantings of table Grapes have been small, and inasmuch as about 7,000 acres were removed last winter, the bearing acreage is now figured at 132,886 acres, compared with 138,857 in 1928.

A crop of 1,010,000 tons of Raisin Grapes (fresh basis) is expected this year, compared with 1,406,000 produced in 1928 and 1,443,000 tons in 1927. It is impossible at this time to estimate what part of the 1929 Raisin Grape crop will be shipped fresh and what part will be utilised in the production of Raisins. In 1928, however, 1,044,000 tons were utilised for drying (drying ratio 4-1), 302,000 tons marketed fresh, and 60,000 tons not harvested. This may be compared with 1,140,000 tons used in the production of Raisins, and 303,000 marketed fresh two years ago. Although the production of both Muscats and Thompson Seedless will be somewhat under that of 1928, the condition of the Muscat crop is a little better than that of Thompsons at the present time. Practically no plantings of Raisin Grapes have been made the last few years. Furthermore, about 12,000 acres were removed last winter, and the 1929 bearing acreage is estimated at 326,150 acres, compared with 338,439 the year previous.

A new "twin-bearing" type of Passion Fruit has been discovered in N.S.W. Efforts are being made by seed selection to fix the type.

The menace of fruit fly from home gardens in Queensland is mentioned in a letter from a correspondent.

Victoria.

Harcourt reports that the present crop prospects are favorable for a record harvest. The district Apple crop should equal that of two years ago, when over 500,000 cases were harvested, and 200,000 cases exported.

APPLE EXPORT TROPHY.

N.S.W. Prize Winner.

Mr. W. S. Cripps, Cranbrook Orchard, Little Hartley, N.S.W., has won first prize of £15 offered by the Royal Agricultural Society of N.S.W., and a silver cup valued at £25, presented by the Orient Steam Navigation Company Ltd. Mr. Cripps secured the maximum points for export Apples in the recent competition.

The conditions of the competition provided for the entry of four cases of Apples, two each of two distinct varieties suitable for export. One case of each variety was judged at the Royal Easter Show. The other two cases were forwarded to London

by the R.M.S. "Orford," on March 27, and judged there. Points for both judgments—in Sydney and London—were added, and the prizes awarded to the exhibitors obtaining the highest aggregate points.

The Apples had to be packed in any bushel case approved for export, and branded in accordance with the Commonwealth fruit export regulations.

The points for judging in Sydney were based on a maximum of 15 for suitability of variety, 15 for quality, 20 for freedom from imperfections, 20 for uniformity of grade, 10 for form, and 20 for packing.

The names and addresses of competitors and the points allotted are as follow:—

Name and address.	Sydney judging.	London judging.	Total.
1. W. S. Cripps, Little Hartley ..	88	100	188
2. W. H. and D. F. Calvert ..	89	97½	186½
3. D. G. T. Gow, Stanthorpe, Q. ..	77	92½	169½
4. W. B. Pascoe, Canoblas ..	83	85	168
5. Baaner Bros., Little Hartley ..	80	87½	167½
6. Butz Bros., Batlow ..	71	92½	163½
7. Morriss & Sons, Tallong ..	78	82½	160½
8. H. Bird, Hartley Vale ..	76	84	160
9. H. Bird, Hartley Vale ..	71	83	154
10. J. S. Cripps, Little Hartley ..	76	72½	148½

Frost and Smudge Fires

THE value of smudge fires to prevent frost has been stressed in some articles by Mr. Creaton in "The Murray Pioneer." Summarised, Mr. Creaton advised the use of smudge fires on calm frosty nights. A reliable thermometer is indispensable, and Mr. Creaton recommended a minimum recording red spirit glass costing 10/6 to 12/6, or a Gaunt's observatory tested thermometer, costing 45/- to 50/-.

French smoke boxes give the best results. These are made of a mixture of tar, pitch, sawdust, resin, and coal dust, and when made in Mildura cost 2/2 to 2/4 for a 56lb. box. Such a box would burn for about four hours and about 45 would be needed for a 20-acre block—15 on each of the sides. For general use crude oil or tar is recommended.

Three degrees of frost (29 F.) will hurt Sultana shoots, and 30 deg. F. will do damage if prolonged, say, for two hours. Start at 3 a.m. if a bad frost is expected. Certainly at 4 a.m. or 5 a.m. if down to 30. Continue smoking until the thermometer reaches 34 or 35.

Pots for tar or fuel oil should be 40 to 50 feet apart on the dangerous southern sides and 60 to 70 feet on the northern sides of the block.

Tests showed that a gallon of tar in a half petrol tin cut the small way burned for 1½ hours; in a tapered bucket, with an average diameter of 8 inches for 2½ hours, and in a 1 gallon lubricating oil tin about 3½ hours.

Fuel oil burned longer than tar, but the tar smoke was blacker and of greater quantity. Results as to cost and efficiency were so nearly alike that there appeared little to choose between oil and tar.

A Waikerie grower's tip, published at the same time, was to use sawdust in a kero. tin with enough crude oil poured on it to make a mixture that will not run. These cost about 4d. each for material and will burn for two hours. Large flower pots, with the hole plugged, make good burners.

"Fruit World" Appreciation.

"Most of our members are already subscribers to your valued publication. I should like to take this opportunity of expressing our appreciation of the 'Fruit World' as issued in the past, as also of the 'Fruit World Annual'."—(Signed) Major A. Brown, Secretary, Spreyton Branch, Agricultural Bureau, Spreyton, Tasmania.

Queensland

Stanthorpe District.

(By a Special Correspondent.)

IT is rather early to state definitely what the coming season has in store for orchardists in what is termed the "Granite Belt."

There has been a heavy blossoming of Japanese Plums and Apricots, and the setting appears to be exceptionally heavy, which will necessitate much labor in thinning.

English Plums and Peaches are now in full bloom, and as the weather conditions are good, there is a likelihood of a heavy crop. It is too soon to say anything about Apples and Pears, although most varieties promise well.

There has been quite a large area planted with trees this winter, including a considerable number of Apples; a large proportion of these are on seedling stocks. Owing to the apparent failure of many of the Apple trees on "Spy" stock, a number of growers have determined to give the seedling a trial.

The use of fertilisers in the orchards here is not general, but growers are beginning to realise the wisdom of maintaining the productiveness of their orchards, and recent reductions in the price of fertilisers will enable more to be done in this matter.

Weather conditions are fine and dry, and vegetable-growers would welcome a little rain.

Last season was one of the best on record, and this district produced 16,000 tons of fruit and vegetables. There are approximately 700 growers here, and on the whole prospects appear good for the coming season.

There was a fairly considerable planting of Apple trees in the Stanthorpe district (Queensland) in the winter just passed. Many of the trees were on seedling stocks, where growers were dissatisfied with the Northern Spy stock.

Victoria

Seasonal Crop Report.

Deciduous Fruit.

WITH the exception of Apricots, all kinds of deciduous fruit trees promise a good to heavy crop next season. Growers have pruned heavily; if this had not been done, the trees would probably again be overburdened with fruit similar to the 1927-28 season.

Although the earlier frosts did not do much injury to the Passion vines, recent reports indicate that the late frosts have done considerable damage. Consequently it is estimated that next season's crop of Passion Fruit will not exceed 60 per cent. of normal.

The Strawberry plants, Loganberry and Raspberry canes look very well, and are expected to yield good crops during the coming season.

The importance of orchard hygiene in respect to the control of codlin moth has been impressed on Apple and Pear growers; and the work of destroying the hibernating larvae of this pest and removing harbors is being generally well carried out.

Viticulture.

Until August the winter maintained its character of unusual and alarming dryness. At the Rutherglen Viticultural Station, only 82 points were registered during July. These conditions were relaxed somewhat during August, 180 points being registered up to 24th instant. This rain was badly wanted and will do much good; more, however, is needed as the subsoil reserve of moisture is insufficient. In irrigated areas the August watering is being regularly applied. The dryness of the season raises fears concerning a repetition of the disastrous frosts of September, 1927. The winter of that year was likewise very dry. It is to be regretted that the movement for co-operative "smudging" contemplated after the 1927 visitation, seems

to have fallen through. Results that are certainly worth while, can be achieved in this way. The broadcasting of frost warnings now being carried out by the Commonwealth Meteorological Department should enable growers to organise better than has been hitherto possible.

Growers have been warned to preventively swab Sultanias and other susceptible sorts against black spot. Traces of the fungus are to be found on many vines; a wet spring would spell disaster to vines not adequately protected.

—J. M. Ward, Superintendent of Horticulture.

HARCOURT.

Big Apple Crop Expected.

Report by E. Pritchard, 17/9/29.

Prospects for Apples and Pears are extremely good, Plums, lighter than last year, Apricots (not many grown), fair, Cherries, good.

Very dry winter experienced in Harcourt, which, together with the fact that winter Apples have been scarcer than usual, has enabled the growers to finish pruning early and get at the ploughing, which is well in hand.

Trefoil, which many of the growers are encouraging by sowing super every year, is lighter than usual owing to the dry winter, and the fact that not so much irrigation was done last summer on account of the light crop.

An effort is being made to fight the red spider this season, which was very bad last year. Growers are spraying oil or lime sulphur in order to cope with it. The Apple crop should easily equal that of two years ago, when 200,000 cases were exported, and the fruit crop, as a whole, exceeded half a million bushels.

The present Apple and Pear grading export regulations are deemed unsatisfactory by the Fruitgrowers' Association of N.S.W., and efforts are being made to secure amendments.

Do not run any Financial Risk with your Fruit
but Consign it to

Telegraphic Address:
"Apples, Brisbane."

H. V. GEEVES

Registered Shipping No. 6.

FRUIT EXCHANGE

BRISBANE

SELECTED AGENT FOR:

Victoria: Harcourt Fruitgrowers' Progress Assn. Ltd.
Harcourt Fruit Supply Co. Ltd.
Victorian Central Citrus Assn. Ltd.

Tasmania: State Fruit Advisory Board.
New South Wales: N.S.W. Central Citrus Assn. Ltd.
Batlow Packing House Co-op. Soc. Ltd.

Citrus News and Notes.

BRONZE ORANGE BUG.

For the control of the bronze Orange bug, officers of the New South Wales Department of Agriculture recommend the bandaging of citrus trees with a sticky substance, such as bird lime or tangle-foot.

This pest is one of the most destructive in the citrus orchards, and has been prevalent in N.S.W. for the past 30 years.

This insect pierces the skin of the host plant, and although it mainly confines its attention to the young and tender growth of the trees, it also attacks the young fruit. The adult bug causes most of the damage, and is about one inch in length.

Curlwaa, N.S.W.—A number of orchardists are increasing their Lucerne plantings for fodder.

Endeavors to establish nursery experimental plots at the local public school are being made.

A new citrus packing shed, with a capacity of 1,000 cases a day and equipped with the latest grading machinery, has recently been completed for the Curlwaa Co-operative Packing Society.

Mr. P. S. Macdermott, previously of the Gosford Citrus Packing House and the N.S.W. Central Citrus Association, has been appointed market representative of the Fruitgrowers' Association of N.S.W.

Fruit Cases.—The Co-operative Box Company of Victoria Ltd., have a well equipped box factory, and are supplying fruit cases of all descriptions of imported softwood. The cases include: Canadian standards, bushels, dumps, Grape boxes, and sweat boxes, etc. Boxes in truck loads are obtainable from this company from their works in Somerville-road, Yarraville, Victoria.

New Zealand.

Lemons.—The Department is assisting to cure, grade and pack Lemons in order to eliminate the rough types previously produced by New Zealand growers. Where proper cultural attention is paid, New Zealand Lemons can hold their own with imported Lemons.

He is a wise man who does not grieve for the thing which he has not, but rejoices for those which he has.

CALIFORNIAN ORANGES AND LEMONS.

The Californian Orange crop is shaping to be below normal. Navel Oranges are estimated at 58 per cent. of normal, and Valencias at 60, as compared with a crop of 93 per cent. of normal last year.

Lemons are estimated at 64 per cent. of normal, as compared with 88 per cent. the previous year.

FRUIT FLY IN FLORIDA.

Total Eradication Hoped For.

THE United States Government is waging a relentless war on the fruit fly, and from responsible quarters, it is expected that the fruit fly will be eradicated. But the price must be paid.

In the "Florida Grower" for July, there is a picture showing a field of Oranges, part of the 500,000 boxes destroyed by the Government; another picture shows a crusher and acid steam plant used in the destruction of fruit.

Growers are expecting to receive compensation for the fruit destroyed by Government order,—the question being whether the United States Government will pay the whole bill or whether they will pay half, leaving the other half to be paid by the State of Florida.

In Florida certain districts have been zoned and subject to certain restrictions fruit can be shipped in the fly-free zones.

A Citizens League was organised to disseminate information to help the Government in its "clean up" work.

Following the destruction of the fruit, careful research is being conducted as to the possibility of their being host plants to carry the fly over till next season.

It is known that Grapes act as hosts for the fruit fly and the 1929 Grape crop is under close observation.

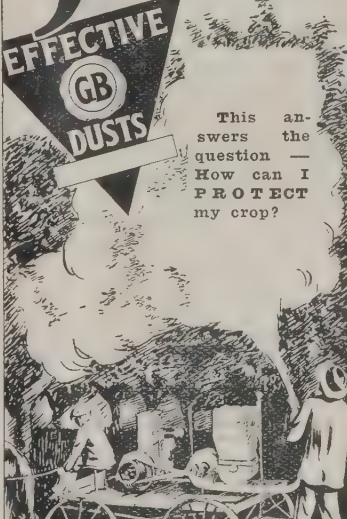
Up to June 1, the Government forces had destroyed 563,067 boxes of fruit in the Orlando area, had thoroughly cleaned up 86,336 acres of citrus groves and 10,000 acres of non-citrus properties, and had re-cleaned 77,702 acres. It had sprayed 61,192 acres of citrus, and had re-sprayed 8,114 acres, using 281,600

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DUSTS

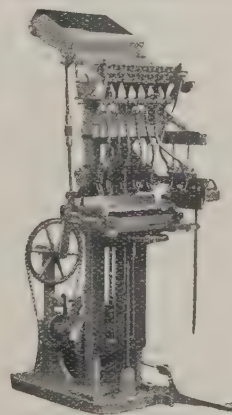
This answers the question —
How can I PROTECT my crop?



GIBBS, BRIGHT & CO.,
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BOX MAKING

MILLERS' BRITISH-MADE
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pounds of sugar, 26,761 gallons of syrup, and 32,896 pounds of lead arsenate in these operations.

VICTORIA.

Citrus.

Much frost damage has been done to the Lemon crop in many districts of the State. In some areas the whole of the crop has been destroyed and the trees, in lower situations, defoliated. The summer crop has also been injured. The crop of Valencia Late Oranges has suffered in many districts along the Murray. Navel Oranges have not been badly affected. Light rains have fallen in Central and North-Eastern portions of the State. Irrigation has, however, been general, and groves are looking very well.

Red Cliffs (12/9/29).—The season's loadings of citrus fruits consigned from Red Cliffs amount to 12,676 cases, compared with 6,917 for the corresponding period last season.

The total quantity of dried fruit railed from Red Cliffs station this season is 412,249 boxes. For the same period last year the deliveries were 164,871 boxes, equivalent to 4,562 tons.

CITRUS FRUIT CAMPAIGN.

Delivery to Household.

The Victorian Railway Commissioners are operating a special cash-on-delivery system in supplying citrus fruits to suburban customers. Under this system the Railways Department will deliver to the purchaser's door any consignment of fresh fruit forwarded to Melbourne, will collect the charges due there, and remit them to the fruitgrower.

The charge for this service is 2½ per cent., subject to a minimum charge of 3d. per consignment, not exceeding 10/- in value, and 6d. per consignment, exceeding 10/-. The value in any one consignment should be limited to £2.

The cash-on-delivery system has been working satisfactorily for other classes of goods, and the extension of its operations to citrus and fresh fruit has been arranged to assist the fruit industry and afford suburban householders an opportunity of obtaining fresh fruit direct from the grower.

About 5,000 men, including national guardsmen enforcing the

quarantines, are in the employ of the Government in the fruit-fly fight.

Fighting Insect Pests in the Orchards

Looper Caterpillars.

The brown caterpillars of the looper moth are making their appearance. They destroy the fruit spurs, and when the Apples are small, attack them. One caterpillar will often eat several holes in every Apple on a bunch. They are usually numerous during November. Looper caterpillars are so called because they have a habit of doubling the body up into a loop as they move. Spray with arsenate of lead.

Woolly Aphis Parasite (Aphelinus mali).

These parasites are now available from the Department of Agriculture (Science Branch), Burnley Gardens, Burnley, or from the local orchard supervisors of the Department. The twigs with the parasites should be put out as soon as possible.

Pear and Cherry Slug.

These insects will soon be making their appearance. The adult is a glossy, black, four-winged insect about 1/5th inch in length. The larvae are dark olive green, slimy. They eat the upper surface of the leaf, causing the injured areas to turn brown. Badly infested trees appear scorched, as if by fire. The larvae cut semi-circular holes in the upper surface of the leaves, and begin to feed. The entire green upper surface of the leaves is removed by the larvae until only skeletons are left. Spray with arsenate of lead. Dust trees with lime, soot, ashes or dry sand.

Red, Black or Olive, Apple Mussel, San Jose and other Scales.

The warm days have caused the young of the abovenamed scales to move from under the adult scales. Spraying with nicotine sulphate or black-leaf 40 sprays should be carried out at once. The red or white oils could also be used.

Thrips.

Keep a sharp lookout for these destructive insects. Gibson and Ross, of Canada, have found that a spray made by the following formula, is

effective against thrips:—2 table-spoonsful Paris Green, 2 lbs. brown sugar, 3 gallons of water.

Caterpillars.

Caterpillars of the painted Apple moth, light-brown Apple moth, Orange butterfly, and other well-known orchard pests, are now making their appearance. When noticed, spraying with arsenate of lead should be commenced, as these caterpillars are destructive to fruit spurs of fruit trees.

Pear-leaf Blister Mite (Phytoptus).

See "The Fruit World," September 1, 1929, p. 348.

Peach Aphids.

Spray with nicotine sulphate or black-leaf 40; 1 oz. nicotine sulphate makes 5 gallons spray, add little soapy water to this mixture.

Codlin Moth and Apple Root Borer.

See "The Fruit World," September 1, 1929, p. 350.

INTERNATIONAL HORTICULTURAL CONGRESS,

London, August, 1930.

The Ninth Horticultural Congress of the Royal Horticultural Society, Vincent-square, Westminster, S.W.1, will be held from August 7 to August 15, 1930, in London.

A strong Executive Committee has been appointed, and all are invited to attend the Congress. The subscription for membership of the Congress is £1, and should be paid to the Secretary of the Royal Horticultural Society, Vincent-square, Westminster, S.W.1. Those intending to attend the Congress should notify the Secretary at early date.

There are to be lectures, excursions, flower shows, and reports.

The main subject for discussion at the Congress will be "Propagation, vegetative and seminal," for which papers and communications have been and are invited. An extensive programme for visits to research stations and gardens of horticultural interest, is being arranged.

Codlin Moth Research.

Tests with Parasite from California.

FRUITGROWERS at Harcourt, Victoria, recently asked the Federal authorities to appoint a full-time officer to Harcourt, to study the life history of the codlin moth, also that permission be given to Dr. Tillyard to visit Harcourt, and give an address on the subject.

Through Colonel Hurry, M.H.R., a reply has been received from the Prime Minister's Department, stating that "the seriousness of the codlin moth pest is a matter which has been recognised by the Council for Scientific and Industrial Research, and special attention has been given by the Council's division of economic entomology to the problem of the control of the pest by biological methods.

"For that purpose an officer of the Council has for some time past, been carrying out investigations in England on the control of codlin moth by means of the parasite *Trichogramma minutum*. The progress made has been satisfactory, and a supply of three distinct races of the parasite are now on their way to Australia, and will be tested under Australian conditions.

"The work in Australia will be centred initially at Canberra, where special facilities for the necessary investigations are being provided in the new entomological laboratories now nearing completion.

"The life-history of the codlin moth has already been fully worked out in many centres in different parts of the world. When the investigations of the Council have reached such a stage as to make it advisable and profitable, necessary action will be taken to bring the matter under the notice of horticulturists in Harcourt and other centres. A visit by Dr. Tillyard to Harcourt at the present time is undesirable, firstly, because the research work is not sufficiently advanced to justify it; and, secondly, because Dr. Tillyard is otherwise fully occupied with work connected with the founding of the entomological research laboratories at Canberra.

"When the researches on *Trichogramma* reach the stage of field testing, it is hoped to

inaugurate orchard tests in appropriate centres. The locality of these tests must depend on the suitability and accessibility of the various districts concerned. The claims of Harcourt will be given due consideration, and a preliminary

visit will be made there either by Dr. Tillyard or one of his officers before the final decision is made."

CODLIN MOTH SERIOUS IN U.S.A.

Arsenate of Lead and Oils Are Being Used.

THE codlin moth situation is stated to be serious in the N.W. Pacific Coast Apple districts of U.S.A. Oils are being used with lead arsenate for control of the pest. In the August issue of the "Skookum News" Mr. Roy Larsen states as follows:—

Continual hot weather during July and on into August (January and February in Australia), usually brings about a rampage of the codlin moth, and this year is no exception. The second brood moth have been emerging in appreciable numbers since about July 21, and in relatively large numbers since July 28, gradually increasing in numbers until August 8, since when we have been getting greater daily moth emergence than at any time during the season.

The young second brood worms have been boring in the Apples since about August 1 (February 1 in Australia) at Wenatchee and in large numbers since about August 7, increasing daily in numbers. The peak of the second brood at Wenatchee will probably be reached about the 25th, but this brood can be expected to continue for the balance of August and into September, depending on how long this hot spell will continue.

To check this onslaught of the codlin moth and save this year's crop from heavy losses, it is necessary, in heavily infested districts, to use some spray other than straight arsenate of lead.

The oil-lead combination is a more effective spray and is being quite generally recommended.

The oil will act as an ovicide and will increase the efficiency of the lead. One per cent. summer oil emulsion is recommended with standard strength lead, using one quarter pound of casein spreader per one hundred gallons.

The spreader should be added to the tank first; then the oil and then the lead, in order to insure thorough emulsion in the tank.

Caution should be taken to avoid spraying when the temperature is above 90 deg. in the shade.

Encouraging Results.

This spray may complicate the cleaning programme, as it will necessitate washing.

A very effective spray now for the early varieties, in case of very serious infestation, is a combination spray of oil and black leaf, using one per cent. oil emulsion and black leaf 1,1600 or one-half pint per 100 gallons. This spray may simplify the cleaning problem.

In districts of light infestation and particularly the late districts, straight lead will probably prove satisfactory where spraying seems necessary at all.

* * *

Experience in Australia.

It was pointed out at the recent Fruitgrowers' Cool Stores' Conference that there was a certain amount of danger in the oil-lead combinations, as some oils had the property of precipitating the lead instead of holding it in suspension.

Mr. J. W. Evans, an entomologist attached to the staff of the Council for Scientific and Industrial Research, recently returned to Australia. Mr. Evans left as a trainee under the Science and Industry Endowment Fund, and spent a year in New Zealand and nearly another year abroad, but mostly in England. He made various trips to Europe in search of insects likely to be of use in the biological control of harmful weeds and insects in Australia, especially St. John's Wort and the woolly aphid.

Special attention is also being paid to the codlin moth parasite.

* * *

Do not sow thorns as you pass along. Remember, you have to return the same way yourself.

Wallowing around in a pool of self-pity is neither swimming nor good sportsmanship.

Appreciations.

"We express appreciation of the 'Fruit World': it is a valuable publication; so is the 'Fruit World Annual.'—A Brown, Secretary, Spreyton Branch Agricultural Bureau, Tas.

"The 'Fruit World' is a very interesting and valuable publication."—P. Hansen, Kalgoorlie, W.A.

New South Wales

Orchard Notes for October.

Codlin Moth.

IN THE EARLIER DISTRICTS prudent growers will have already taken active measures to combat the codlin moth, but in later districts the first steps in control will be commenced during the current month. There should be little need to stress the fact that the measures adopted must be timely and thorough

Bandages when placed upon the trees provide a convenient shelter for the grubs. The bandages should therefore be carefully examined every fortnight, and all sheltering grubs destroyed. All loose bark and the butt of the tree at ground level should also be closely examined, as the grubs frequently take shelter in such places.

The first or calyx spray is one of the most important controls, and it is often advisable to give a second calyx spraying because of the fact that all stages in the developing of the flowers do not synchronise. The spraying should be forcible enough to drive the poison into the calyx, otherwise the spraying loses much of its efficacy. Care should be taken to use the exact quantity of lead arsenate prescribed, and the mixture should be thoroughly mixed before commencing to spray, and should be kept well agitated during the operation.

The time during which spraying can be most effectively carried out is short, as many Apple and Pear trees reach the proper stage for spraying almost simultaneously, which means that, in the case of large orchards, long hours have to be worked if the work is to be done speedily and thoroughly. There must be no relaxation of effort, as the foe is insidious, numerous, and persistent, and, as has been previously remarked, precautionary measures are preferable to remedial efforts.

After-care of Buds and Grafts.

Upon grafted or budded stock there is always a chance of growths from the stock developing so vigorously as to rob the bud or graft of nourishment. Thorough periodical examination should be practised to keep such growths in check, but at the same time all such growths should not be destroyed, as they afford beneficial shade for the stock. Moreover, in the event of buds or grafts failing, these outgrowths from the stock are needed upon which to re-bud or re-graft should such be necessary. The best plan is to pinch back the weaker shoots until the grafts or buds have developed sufficiently to form a head.

The Cultivator.

The conservation of soil moisture being necessary as a precaution against dry spells, the cultivator should be kept at work in order to maintain the surface soil in a proper

condition. Besides helping to maintain a surface mulch, the cultivator will destroy weed growth. In fact, its use does more than this; it encourages vigorous tree development and vigorous bud development. Keeping the soil in good tilth is a very important factor in successful orchard management.

Surface Drains.

Reference has already been made to dry spells, and although it may seem absurd to advocate surface drains in districts that experience

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—thorough not only in scattered orchards, but throughout the whole of any given district. The value of even the most effective measures are rendered almost useless if a neighboring grower is careless or indifferent in regard to control. The methods of control are well known to almost every grower, and they include thorough inspection of all sheds, packing cases, and bandages. It is always well to remember that one season's infestation is due to the carry-over grubs of the previous season,

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such droughty condition, orchardists know full well that the heavy downpours experienced in the intervening periods make surface drains very necessary for carrying off surplus water with the least possible loss of soil and plant foods. In the planning of these drains care is essential in order to secure the easiest slope and to ensure the most economical distribution of the drains,

Aphis.

Upon the first signs of aphis infestation on drupaceous trees, such as Japanese Plum, Peach, Nectarine, and Cherry, they should be sprayed with tobacco wash or one of the commercial nicotine extracts. Use a high pressure when spraying, and repeat the operation, if necessary, after an interval of two or three days.—C. G. Savage and H. Broadfoot, in N.S.W. "Agricultural Gazette."

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FRUITGROWERS' FEDERATION OF NEW SOUTH WALES.

A MEETING of the Board of the N.S.W. Fruitgrowers' Federation was held at Sydney on September 20. There were present: General J. Heane (in the chair), Messrs. A. U. Tonking (Orange), T. A. Tester (Young), F. Helson (Leeton), J. Neil (Glenorie), A. J. Taylor (Singleton), W. W. Challis (Kentucky), R. Hill (Narara), W. E. Kirkness (Gosford), L. C. Willis (Bathurst), H. G. Such (Griffith), A. F. Dunstan (Sackville), and E. E. Herrod (Secretary). Apology for non-attendance from Mr. A. E. Herring (Batlow).

Death of Mr. Wark.—The President referred to the loss sustained by the death of Mr. Wark since the last meeting, and reported having forwarded a letter of condolence to Mr. Wark's family on behalf of the Board.

Mr. L. C. Willis Elected.—The vacancy on the Board was filled by the election of Mr. L. C. Willis, of Bathurst.

Vice-President.—Mr. T. A. Tester, of Young, was elected Vice-President in place of the late Mr. Wark.

District Councils.—Correspondence from the Central Coast District Council was received, asking that the rules be amended to show more clearly the basis, powers, and duties of District Conferences and District Councils.

Industries Preservation Act.—The President reported that discussion by the Overseas Transport Association revealed a necessity for an amendment of the Industries Preservation Act to allow agreements being made between shippers and shipowners with the object of effecting economies and thus prevent increases in freights; it was decided to support the Overseas Transport Association in urging upon the Federal Government the necessity for adopting some such amendment.

Dried Fruits Preservatives.—In regard to sulphur dioxide content in dried fruit, a Committee consisting of scientific officers from Victoria, South Australia, and New South Wales is at present working on the matter, and certain recommendations have been drawn up for the processing of Apricots.

In addition, experiments are being carried out under the following headings:—

- (a) The removal of excess sulphur dioxide.
- (b) Variety of fruits.
- (c) Effects of temperature, including artificial heat.

- (d) Quantity of sulphur and period of exposure; and
Other headings on which information is required.

Citrus Import Prohibition.—The Secretary reported having circularised districts and the other States, setting out a case in support of the prohibition of the importation of citrus fruits and alternatively for an increase of the import duty. The co-operation of the other States has been secured.

Citrus Grading Regulations.—The Victorian Central Citrus Association

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wrote, requesting further consideration of the alteration of the blemished area in "Standard" to 1 inch instead of 1½ inches. Decided to reaffirm the decision of the last meeting.

Health Week.—As Health Week will be held from October 6 to 13, steps are being taken to bring under public notice the necessity for a greater consumption of fruit in the diet.

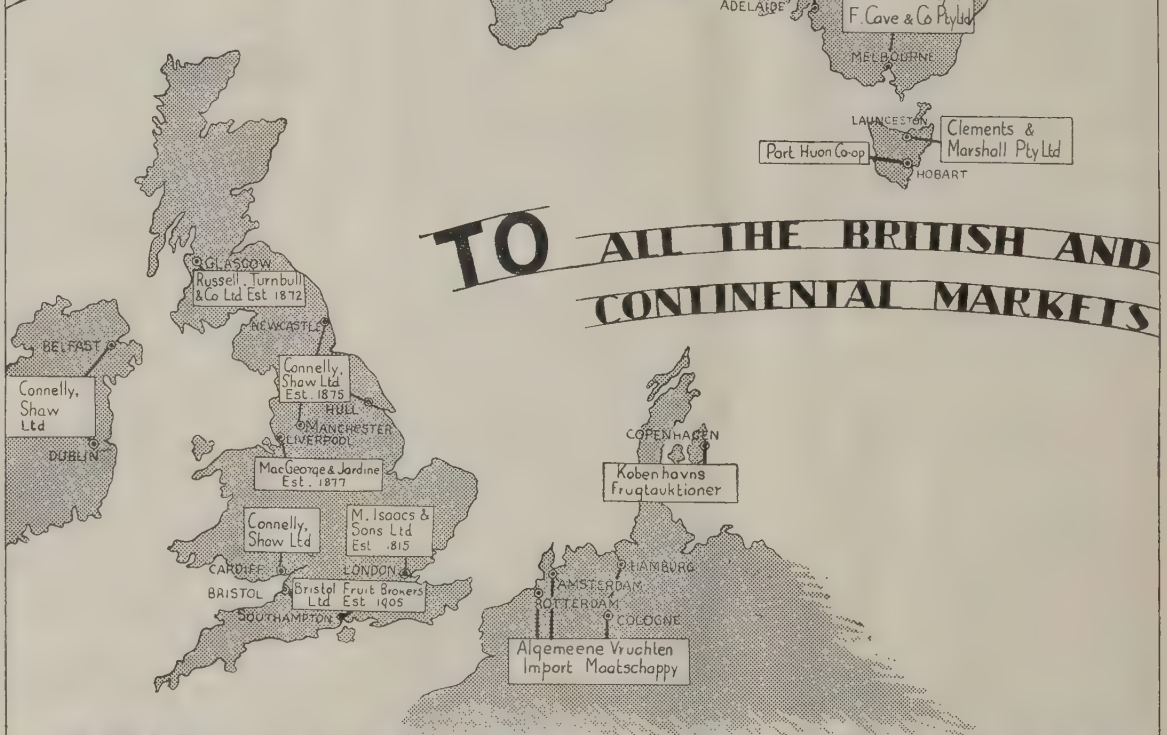
Shipment to Hull.—Authority was given to the Secretary to assist in organising the shipment of Apples for Hull next season.

Gippsland (Vic.) growers are urging the establishment of an experimental orchard in that section.

Arsenate of Lead.—Messrs. Jaques Pty. Ltd., manufacturers of "Elephant" brand arsenate of lead and other spraying products, are recommending the use of an arsenate of lead paste in fighting the codlin moth. The firm is manufacturing a white oil emulsion to also assist in codlin moth control.

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Market Representative.—Mr. P. S. Macdermott was appointed market representative.

Mr. Macdermott was for a number of years the manager of the Gosford Packing House, and was in charge of their selling floor in the markets for one season. He was also engaged as a market representative for 12

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months with another organisation handling various fruits.

Markets Reports.—It was decided that Oranges should be quoted with three ranges of prices for each grade—"large," "medium," and "small," but that the word "medium" should not be used, and a range of counts be substituted on a basis such as the following:—

Navels,	"Special,"	"large,"
"	"	96 to 175
"	"	"small."

Similarly with "standard" and "plain," and also in regard to the other varieties. In regard to Mandarins, the correct grade names, such as "special," "standard," and "plain," should be used instead of "choice," as now appears in the reports.

Carters—Stealing of Fruit.—With regard to a carter being charging with stealing Apples from an ullaged case, the Secretary reported the circumstances to the Department of Agriculture and the Attorney-General. The Under-Secretary for Justice advised that police supervision in these matters is being maintained, and the Under-Secretary for Agriculture expresses the opinion that no further action can be taken at the present time, but that the Department is keeping the matter under notice.

Farm Produce Agents' Act.—The meeting decided to request the Government to proceed with amendments to the Farm Produce Agents' Act as an urgent matter, particularly the clauses designed to ensure the registration of those agents now trading as merchants.

Export Regulations—Apples and Pears.—It was decided to endeavor to influence the other States in support of the Federation's attitude towards the desired amendments to the regulations so as to assist in the negotiations with the Minister.

Fruit Fly Restrictions Within the State.—The Secretary reported a decision by the Department of Agriculture to issue a proclamation covering the Northern Tablelands district, similar to that now in force covering other Apple-growing districts.

Orchard Competition.—The Royal Agricultural Society, having decided to give a prize for the best five acres block of citrus, a Committee was appointed to arrange details.

Railways.—Mr. Tonking referred to the national aspect of the State railways and the serious effect that motor competition may have, and asked the Board to give consideration to a suggestion that certain aspects should be brought under the notice of growers. After discussion, a motion as follows was adopted:—

"That the Secretary be instructed to setting forth the position as affecting the railways and motor competition, appealing to members to consider the whole position and wherever possible give preference to the railways."

Co-operation Act.—The Secretary reported that the following two motions adopted by the last Annual Gen-

eral Conference were conveyed to the Registrar of Co-operative Societies:—

- That Co-operative Societies be allowed to invest in non-co-operative companies.
- That the Co-operation Act be amended to do away with the payment of stamp duty on transfers of shares in a co-operative society registered under the Act.

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The Registrar advises being in agreement with the first proposal, but owing to certain legal objections it has not yet been possible to frame a regulation. In regard to the second resolution, it is considered that the amounts involved do not warrant any action being taken.

It was decided to request that provision be made to render it unnecessary for contracts made by a co-operative society with its members to bear the payment of stamp duty.

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is a scientific product, prepared from strictly high quality materials, and packed while fresh and keeps in that condition until used. Chemical tests have shown that "FLUXIT" has not deteriorated after 3 years in its original containers.

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"FLUXIT" is not a calcium caseinate. The latter was proved to be deficient three years ago. "FLUXIT" is the only spreader which makes improvement from year to year, and is the result of years of research to make spreader conform to what it should be. A material that will deposit twice the amount of lead and remove it easier than any other spreader or obsolete calcium caseinate. "FLUXIT" is prepared so as to cause every kind of standard spray material to become more efficient.

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BANANA-GROWING IN N.S.W.**"Bunchy Top" Control.**

IN order to ascertain to what extent the bunchy-top campaign had been successful, the Director of Horticulture in New South Wales (Mr. C. G. Savage), together with the Departmental biologist (Dr. Noble), visited the Richmond and Tweed River districts recently. On his return, Mr. Savage said that the campaign was proving a great success. Where

department refusing to issue planting permits to others in the immediate vicinity.

It appeared that a great majority of the growers were anxious that the present regulations should be strictly enforced.

* * *

It was decided at a meeting of the N.S.W. Banana Growers' Federation at Lismore, to ask Dr. Sinclair to accept the challenge of Prof. Goddard to prove the efficacy of his reputed cure of bunchy top, or to give some practical proof of his claims within three months. The Federation decided that if this proof were forthcoming it would advance Dr. Sinclair's claim for financial recognition.

It was also decided to ask that the Government give greater powers to the zone committees, and for authority to enter plantations where growers were lax.

Orange, 21/9/29.

There are indications of a heavy crop all through this season, Cherries, Plums, Pears and Apples.

We are experiencing a dry time at present. Although the soil is in good working order, the subsoil requires a good soaking rain.

Red spider was showing up badly, the worst this district has seen, but it is now well under control.—W. E. West

Galston Show. — At the Galston (N.S.W.) Show some of the best citrus ever exhibited in New South Wales was shown. The Oranges, Lemons, and Mandarins were in perfect condition.

Mr. A. J. Hitchcock, of Glenorie, was presented with the Fagan Cup, having won it twice in succession. He was also awarded W. J. Lyons' Cup for an excellent pyramid exhibit of citrus fruit. Mr. J. Miller, of Galston, was second in this section, and Mr. W. J. Fagan, Secretary of the Association, was third. Mr. Fagan displayed a new variety of Mandarin.

The Passion Fruit shown by Mr. Nicolson and Mr. Neitch was of high quality and attractive appearance. The table displays of Mandarins, Valencias and Lemons were also exceptionally fine. A fine collection of vegetables was shown by Douglas Mitchell, of Gosford (age 16 years).

New Type of Passion Fruit.

The "twin" Passion Fruit, displayed by Mr. J. Neitch, Jnr., created considerable attention, and an effort is being made to see if the type can be fixed. The fruits are of excellent quality, and hang on a long, separate stem. Seeds are being saved and

sown. It is believed that if the type can be fixed it will greatly increase yields.

"The Australasian Poultry World" is a monthly paper of great value to all interested in feathered stock. The October issue has some excellent articles on "Rearing Healthy Chicks," "Bantams, — a Profitable Hobby," "Home-made Brooders," "Turkey Raising," "Diagnosing Disease," "Results of Egg-laying Competitions," "Interstate News and Notes," "Some Notes and Recipes," "Trees for the Poultry Farm," "Poultry for the Table," "Better Egg Marketing,"

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Co., Hobart, Tasmania.

growers were carrying out the regulations, very fine plantations were resulting, from which high quality fruit was being sold at profitable rates.

A great majority in the Brunswick, the Richmond and Clarence areas were making a determined effort to eradicate diseases, and were very successful. However, some growers would not realise the necessity for defining bunchy-top in the early stages and promptly removing the affected plants. Such growers were the cause of the

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etc. There are answers to various correspondents, and a page for the young folk conducted by Uncle Chickweed. "The Australasian Poultry World" has won golden opinions from readers all over Australia and New Zealand. The paper is obtainable on the 1st of each month from news-agents. Sample copies gratis on application to the publishers, The Horticultural Press Pty. Ltd., Box 1944 G.P.O., Melbourne.

An Authoritative Opinion

GIVING evidence before the Tariff Board in its recent Fertiliser Enquiry, a South Australian witness (a practical orchardist and nurseryman, and a Member of the Advisory Council of Agriculture) said:

“Tests at the Experimental Orchard at Berri indicate that Sulphate of Ammonia is producing results in fruit production not obtainable with other manures tested under their experiments. Similar results apply to experiments carried out at the Government Experiment Orchard, at Blackwood, on apples and other fruits. It is not my intention to quote a multitude of figures in support of these claims, as I believe you to be fully aware that

SULPHATE of AMMONIA

will produce more fruit, and of a better quality, without going into the results of tests which have been carried out from time to time in various parts of the world, and which are no doubt familiar to you.

“As far as our own State (South Australia) is concerned, the results obtained at the two above-mentioned experimental orchards are convincing enough to warrant little comment.”

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Plant Orange and Lemon Trees Now.

OCTOBER is a good month in most districts for the planting of Orange and Lemon trees. These trees are liable to be damaged by frosts in the first year of growth, hence the desirability of planting in the spring, when danger of frost is past.

The ground needs to be thoroughly prepared by deep digging, breaking up the subsoil in order to give the roots a free run. Dig an area of, say, 5 feet square, and see that there is ample drainage for surplus water to get away. Citrus trees will not stand wet feet.

Dig a hole to receive the tree. Before planting, place a stout stake firmly in position. Do not plant the young tree too deeply, and be careful not to plant the budded graft or collar when filling in the soil. Give the soil a thorough watering and add a mulching of grass, leaves, or straw, in order to prevent rapid evaporation.

After planting, see that the roots do not become dry. Citrus are surface-rooting trees, so be careful when watering to do it thoroughly, giving ample soakings, as surface sprinklings would tend to bring the roots to the surface, with the result that they would thus get scorched during the hot summer.

Some Orange varieties are more suited to particular districts. A useful selection for general planting will be found among the following:—Washington Navel, Valencia Late, Mediterranean Sweet, Jaffa. Two popular Lemon varieties are Lisbon and Eureka.

Citrus trees are gross feeders, and when established it is advisable to give them in spring, an application of fertiliser, such as a mixture of bone-dust, blood and superphosphate, adding a little potash.

Greatest Little
The GRAVELY

Works where Others CANNOT Work!



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Plows Harrows Seeds Cultivates Mows

Undisputed Choice of Thousands of Market Gardeners, Florists, Nurserymen, Seed Growers, Poultrymen and Farmers who demand work that only the Gravelly can do.

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Fruit Export.—An enterprising organisation for the export of Australian fruit is that of Mr. F. R. Mellor, of 440 Elizabeth-street, Melbourne, and his overseas connections, as follows:—In London, Messrs. Chas. Knights Ltd., located in the main street of the new Spitalfields Market; in Liverpool, Messrs. Woodall & Co.; in Hull, Messrs. W. G. Gosling; and in Hamburg, Messrs. Heinr. Tiencken; and all have been handling Australian Apples for several years past. These firms were able to return payable returns in the very difficult season of 1928, when the markets were so heavily supplied.

Mr. Mellor points out that the growers themselves can do much to increase the demand for Australian fruit by accurate grading, and giving full weight, that is, 40 lbs. to the case. Further, it is recommended that growers send to each market what that particular market wants. London and Hull, for instance, do not care for large-sized Apples, especially Jonathans, and to eliminate these will help to secure higher average prices. On the other hand, Liverpool and Hamburg are prepared to take a proportion of the large sizes, provided, of course, they arrive in good condition.



Codlin Moth

Messrs. William Cooper & Nephews (Australia) Limited—the proprietors of Cooper's famous Sheep Dip—have pleasure in announcing that, as the direct result of special research and a series of practical tests carried out in Australia by their own Scientific Staff of experts, working in collaboration with the officials of the Departments of Agriculture, they are now able to supply orchardists with the most perfect emulsified white Oil for spraying Fruit Trees in leaf.



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Elder Smith & Co. Ltd., Adelaide.
West Australia—
The Westralian Farmers Ltd., Perth.
Queensland—
Southern Queensland Fruitgrowers' Society, Ltd., Cleveland, Brisbane.

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AND
EMULSIFIED
ARSINETTE
WHITE OIL

Tasmania.

Report from Bagdad, by S. J. Bisdee.

Final returns from overseas shipments are now to hand, and the excellent prices realised on the late boats have made for good average returns for the whole season—for those who had crops, which were unfortunately few.

This biennial cropping is a bad feature in our industry, and growers would be well advised to

endeavor, by better orchard practices, to bring about good average crops, year by year. Of course, sometimes climatic conditions will upset all calculations. Nevertheless, there is room for improvement in methods.

Big Crop Showing.

On the showing of buds there is another big crop ahead, and growers have mostly begun well by heavy elimination of buds during pruning

operations, but to ensure a good crop of good quality fruit, they will need to take their courage in both hands and thin the fruit rigorously also. There is no doubt that it pays.

We see far too much of these big crops consisting largely of marbles, and if this is allowed, the trees are sapped of their vitality and have no chance of building up healthy buds for the following season.

Manuring is Necessary.

Growers generally could also do much to improve matters by giving trees a liberal dressing of fertilisers, and this—together with thinning—will help to put the trees in good heart to carry their crop and provide for another the following year.

Most orchards in this dry district would benefit greatly from regular green manuring as well, to build up the fertility of the soil. Several are using horse beans for this purpose, and they seem the most suitable crop.

Seasonable Spraying.

Spraying with the iron sulphide mixture has been carried out fairly generally for the control of powdery mildew—probably the orchardists' worst enemy in this district. In some cases this has been followed by a spraying of oil emulsion.

The district has experienced a very severe winter with constant hard frosts and light falls of snow. At the same time there has been a very serious lack of rain right up to date. This state of affairs may make for easier control of black spot, but it is never wise to be led into a feeling of false security with this disease, and full precautions should be taken on the chance of heavy rains in the near future. The country needs a thorough soaking.

Frosts are continuing, and are likely to continue as long as it keeps dry, and one, a few days ago is reported to have slightly damaged Apricots, which are getting close to the setting period.

Growers are most appreciative of the very helpful lectures by the various officers of the Agricultural Department at meetings of the Agricultural Bureau, and it is becoming evident that their efforts are bearing fruit.

The local Co-operative Association last year experimented with pine cases and colored labels for overseas shipments. Results were most satisfactory, and this year pine cases will be used again.

Orchard cultivation is well forward owing to the favorable weather conditions.

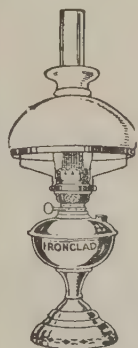


Table and Hanging Lamp, hand-somely finished in Oxidised Copper or Nickel Plate. Catalogue free. Phone 6645.

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 100 Candle Power Light for 8 Hours from 1 Pint of Kerosene.

THE NEW IRONCLAD LAMP

Made in England.
 The Best Lamp in Australia. Pays for Itself.
 Old Lamps Converted to the Titus, 150 c.p. Lamp.
 Allowance Made on Old Lamps as Part Payment for New Ones



THE EDGELL SPRAY PISTOL.

Fitted with the Improved Small Jet.
 The most economical Sprayer ever invented. Saves 1 cwt. arsenate of lead in a week's spraying. One man can do the work of two with the Edgell.

Every user testifies to the above facts.

Also, the Mason Automatic, at 25/-.

T. W. SANDS, The Melbourne Lamp House

Agent for Knight Light Air Gas Plants and all Accessories.

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M. ASVARISCH

FRUIT BROKER

Copenhagen - Denmark

Consignments Received. Jorks Passage.
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Inquiries for Victoria and South Australia.
 to

J. B. MILLS & CO.
 Bank House - Bank Place - Melbourne

VOLCK—

the original white oil spray—
the most effective spray for
CODLING MOTH

THE combination of VOLCK and Arsenate of Lead is a very effective spray, giving complete control of codling moth, while VOLCK alone completely destroys aphids, red spider, and all other orchard pests. It is the original white oil spray, and has had six years' wide commercial use. In America it is now being used as the standard spray for scale pests on Citrus trees. At the last meeting of the V.C.C.A., Mr. Lindner, of Wangaratta, said that many of the sprays on the market were in experimental stages. Growers did not know what they would do, but they did know what VOLCK could do. ("Citrus News," June, 1929.)

VOLCK was the only White Oil Spray used in the 1926-27 tests conducted at Harcourt, Victoria, by the Agricultural Department. The results were as follows:—

Arsenate of Lead, 5 lb. to 80 galls.	11.1%	Grubby
Arsenate of Lead, 4 lb. and 1 pint nicotine to 80 galls.	12.9%	Grubby
Arsenate of Lead, followed by "VOLCK"	0.4%	Grubby

"The only block which showed a satisfactory result, treated with two calyx sprays of Arsenate of Lead, followed by three sprayings with "VOLCK" Summer Spraying Oil, 1 to 32, stood out from the beginning of the fruit season. It was only late in the season that any attack by Codling Moth could be detected."—(Extract from the Journal of the Department of Agriculture, Victoria.)

VOLCK

Active ingredients, Petroleum 83%
Inert ingredients 17%
For Codling Moth control 1½ gallons
VOLCK to 100 gallons of water, in conjunction with Arsenate of Lead, gives best results and proves thoroughly efficient.

Send for VOLCK descriptive Literature, Price Lists, etc.

Victorian Agents:

H.C. PANNIFEX & CO.
26 MARKET STREET—MELBOURNE, C.1.

Sole Agents for N.S.W., Queensland, S.A., W.A., and Tasmania: Australian Fruit and Produce Co. Ltd., Fruit Exchange, Sydney.

THE SIMAR ROTOTILLER.

A large number of gardeners attended the demonstration of the Simar Rototiller, at Mr. T. Marriott's market garden, Jasper-road, Bentleigh, early in September. The Rototiller ploughed hard ground, pulverising the soil. It was noted ploughing could be regulated to a depth of ten inches, even in the hardest soils, that manures, including green crops, could be mixed evenly and consistently throughout the total depth of the tilth. Further, that for scarifying the soil could be worked two inches from the surface.

The usefulness of the Rototiller was shown in its capacity, not only to plough and scarify, but for such other work as ridging, weeding, and as a stationary power generator. The lightness of the machine caused favorable comment, and the ease with which it could be controlled, the operator simply having to walk behind or at the side of the machine, guiding it with the handles. These



Soil cultivation demonstration with the Simar Rototiller.

handles could be moved from side to side with ready facility.

The engine is air-cooled, and was noted to be of first-grade construction.

Altogether the Rototiller is deemed to be suitable for orchards, citrus groves, vineyards, market gardens, nurseries, and land working generally.

GRUBBING

Thousands
in Use

It earns its
Famous
LOW PRICE
in a Few Days

Write for
Catalogue

WITH A "DIGGER" WINCH

A Man can uproot more Trees and Stumps in
a Day than he would dig out in Ten Days

QUICK MANUFACTURING CO., 75 Penders Street, Thornbury, Victoria

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 (Nicotine Sulphate)

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Grubs and Eggs in Dried Fruit

are the terror of the fruitgrower, the grocer and the consumer. All dried fruits, nuts, etc., coming into Australia should be sterilised to kill all the grubs and eggs present. As all insect life and eggs

Can be Completely Eradicated

by the Hydro Vacuum process, Australian Dried Fruit could be so treated, and sent out in sealed containers to prevent re-infection. With such delightful, clean fruit, public confidence would be gained, resulting in mutual satisfaction and bigger trade. The old-time fumigating system has been rendered obsolete

By the Sterilizing Process

perfected in Victoria and patented through the Commonwealth. Strict tests under Government supervision prove that this process is absolutely satisfactory in the destruction of all insect life and eggs in dried fruits, nuts, grain, borers in timber, eelworm and bulbmite in bulbs. This effective system

Of the Hydro Vacuum Fumigation Co. Ltd.

is in operation at the Company's works, Ingles-street, Port Melbourne. The penetration of the lethal gases is complete, without opening cases or cartons. Further, the goods are in no way harmed. Full information is contained in a descriptive booklet obtainable free on request. This contains report of demonstration on September 4, before Federal and State Government officials.—Write for your copy now.

The Hydro Vacuum Fumigation Co. Ltd., officially registered as a Quarantine Station by the Plant Quarantine Department. Works: Ingles-street, Port Melbourne. Office: Temple Court, Collins Street, Melbourne, C.I. Phone: Central 2670.

FRUIT EXHIBITS AT THE MELBOURNE ROYAL SHOW.

NOTWITHSTANDING the adverse season, some good quality fruit was shown in the competitive section at the Melbourne Royal Show. Citrus fruits were fairly well represented, but entries in the Apple and Pear sections were not as numerous as previously, due to the failure of the crop. Those growers who made a special effort under difficult conditions to stage exhibits are to be congratulated on their enterprise.

In the opinion of one of the judges in the fruit section, Mr. A. F. Thiele, the exhibits of Apples and Pears were the best from a quality point of view for years. Another pleasing feature was the manner in which the fruit kept its quality. When inspected after nine days on the show bench, Mr. Thiele could find only one slight discoloration. The Pears were exceptionally good. This fact reflects great credit both on the grower and the cool stores, for it must be taken into account that the bulk of the fruit shown was picked in March last, and held in cool store since then, a matter of seven months.

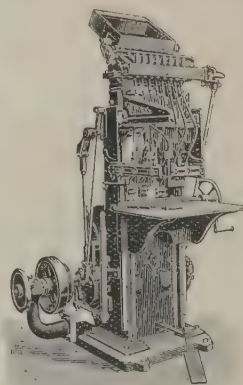
The Governor-General's and the

Cool Stores' Association shields, for the collection of Apples and Pears, were secured by the Blackburn Cool Stores Pty. Ltd. The varieties shown included:—Apples: Jonathans, Red Rome, Crofton, Granny Smith, Delicious, Yates, London Pippin, and Statesman. Pears: Stewart, Beurre Bosc, Winter Cole, Winter Nelis, and Josephine.

The quality of the fruit was excellent, and this was maintained throughout the show in a wonderful manner. Although there was only one entry in this section, it did not detract from the merit of the victory. Competent judges considered that the display by the Blackburn Cool Stores Pty. Ltd. was quite the equal in every way of previous years.

There were five entries in the competition for the best packed case of Apples for export. The "Orient Prize." Two cases are judged here and two cases are to be sent to London and judged there. Points for both judging in Melbourne and London are to be added, and the prize awarded to the exhibition obtaining the highest aggregate points. Mr. J. D. Grant (Tyabb) secured the first and second prize, and the third prize was secured by Mr. K. Cleine.

With the exception of the second



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**Case Nailing, Case
Printing and Shook
Splicing Machines
which are Time
Saving and Profit
Increasing.**

Keep yourself acquainted with modern developments in machinery. Every new labor-saving device must affect you. If your competitor adopts it, it HANDICAPS you; if you adopt it, it AIDS you.

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"To Choose the Best is Wisdom"

Two and Three Grading Two and Three Grading

For years other countries have been grading fruit into two and three qualities. Australia is now coming into line, and will shortly be in a position to successfully meet all competition.

To secure Top Prices for your best quality fruit, it is necessary to eliminate the second and third qualities. This can only be done profitably with proper facilities.

These facilities we offer you in the "LIGHTNING" Model 17 two and three quality Sizer—designed specially for quality packing. The design is simple—Packing Space very ample—Write for particulars.

THE "LIGHTNING" FRUIT GRADER CO.

5 Hoddle Street Collingwood, N.9., Melbourne, Vic.

Cable and Telegraphic Address:—"LIGHTNING," Melbourne.

prize-winning exhibit, the fruit did not stand up so well in storage this season as it did in transit. Mr. Grant's winning exhibit consisted of the varieties Sturmer and Jonathan. In London he was awarded 99 points out of a possible 100—a wonderful performance—but the fruit picked and packed at the same time held in storage in Melbourne only secured 80 points in the Royal Show. His second prize exhibit, which consisted of Sturmer and Cleopatra, while scoring only 74 points in London, gained 91 in Melbourne. Mr. Cleine showed Rokewood and Rome Beauty. These varieties were only able to secure 87 points in London and 72 in Melbourne.

In the export packing competition for Oranges the first prize was secured by the Irymple Packing Pty. Ltd. with 90½ points. The same company also secured the "Isaacs" Shield, presented by Isaacs & Sons Ltd., London. The second prize was secured by H. B. Martin with 89½ points.

There were no entries for the collection of citrus fruits for the Rupert Watson Shield.

The dish exhibits of Apples and Pears, although small in quantity, were quite up to the quality of previous years. The following were the successful competitors:—

In Apples and Pears.—Messrs. Pryce, May (8 firsts, 7 seconds and 1 third); C. Downey (7 firsts, 3 seconds and 3 thirds); J. D. Grant (6 firsts, 3 seconds and 1 third); S. G. Downey (3 firsts, 3 seconds and 3 thirds).

In Pears Only.—W. A. Thiele (7 firsts, 2 seconds and 1 third), and August Thiele (3 firsts, 4 seconds and 1 third).

The following were also successful competitors:—Messrs. Frank Petty, Karl Cleine, Two Bays Nurseries & Orchard Co., W. F. Boe, H. J. Noonan, Roy Petty, F. Petty, E. A. Thiele, L. A. P. Webb, C. J. Monaghan.

In the citrus exhibits the following were successful:—Irymple Packing Pty. Ltd., Curlwaa Packing Society Ltd., Messrs. E. F. Page, A. R. Smart, S. Scott, L. A. P. Webb, H. J. Noonan, and H. B. Martin. Dried fruits:—Aurora Packing Co. Ltd., Irymple Packing Pty. Ltd. Walnuts:—C. J. Monaghan.

In the Apples packing competition for State school children, conducted by the Department of Agriculture, the first prize—shield valued at 25 guineas, presented by the Fruit Exporters' Handling Committee—was secured by Miss Molly Mayger (Pakenham East); second prize, Miss Elsie Arnott (Doncaster East); third prize, Dudley Sharp (Ringwood). In all, there were thirty-four entries in this section, and the entries were highly commended.

PERSONAL.

Mr. V. C. Williams, fruitgrower, of Griffith, N.S.W., recently returned from a visit to California.

That Subscription! It's a small matter, but the management would appreciate readers sending in their subscriptions promptly. It helps us to help you!

-LEMONS-

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MELBOURNE.

Horticultural Research Work is Imperative.

The Claims of Gippsland for an Experimental Orchard

Improved Export Marketing Methods Also Advocated.

Important Meeting at Pakenham, Vic.

AN important meeting of the Gippsland Fruit Marketing Association was held on Friday, September 13, at Pakenham. There was a large and representative attendance of orchardists from Narre Warren to Bunyip. Mr. J. J. Ahern presided.

Mr. Thomas (Bunyip) moved: "That the State Government be urged to take immediate steps to establish an Experimental Orchard and Research Station in Gippsland for an intensive study of the problems of soil, culture, manuring, pruning, spraying, and all matters relating to the production of Apples and Pears." He pointed out that though the annual production of fruit in the Commonwealth was now worth about £18,000,000,

comparatively little research work was being done in solving the problems facing fruitgrowers. The grower had learned to look to the scientist for expert guidance, and had a claim upon the Agricultural Department and the Government for this vital assistance. In England and Wales there were 18 research institutions, six of which dealt with matters of interest to fruitgrowers. In America every State had its research workers and institutes to assist the man on the land. In Victoria some-

thing had been done to help the vine-grower and the farmer, and it was high time that some definite and practical assistance was given to the Apple-grower. Sir John Russell during his recent visit had said—"You must have your own elaborate scientific service to work out your problems."

Nurserymen were anxious that a

scientific study of stocks should be carried out as soon as possible, and the problems to be studied in regard to pruning and spraying were urgent and numerous.

In seconding this motion, Mr. J. W. Bailey said that there was no doubt that such work was urgently needed, if we were to put our industry on a stable footing, while Mr. H. G. Colombie pointed out that though the number of producing trees in U.S.A. had fallen by 35 per cent., through better methods of production, the total quantity of fruit marketed remained the same.

It was decided to place this matter before the Minister by deputation, as soon as possible.

Mr. H. G. Colombie then addressed the meeting on marketing, with special reference to the conditions likely to affect the 1930 season. He showed that while the consumption

of fruit was rapidly increasing overseas, production to meet this demand was also increasing. Competition was, if anything, fiercer than ever. At the auction sales, the buyers were specialised agents. Their time was very valuable, and they could not afford to inspect the thousands of small lots of stencilled brands piled up on the wharves. They preferred to take recognised brands, and the standardised pack would score every time.

Another axiom of marketing was to spread the product over as many ports as possible. In this way growers would spread the risks. He urged growers to export their fruit not only to London, Hull, Liverpool, and Hamburg, but also to such ports as Rotterdam, Copenhagen, Glasgow, Cardiff and Newcastle.

To give security to growers, a plan was outlined to enable those who desired to do so, to sell their fruit on a joint account basis, and the figures handed in to the Secretary at the close of the meeting showed that many men appreciated the chance.

An Aid in Spraying.—The Edgell spray pistol is used by many growers, and is appreciated. This device is fitted with an improved small jet, and is estimated to save $\frac{1}{2}$ cwt. arsenate of lead in a week's spraying. The Victorian agent is Mr. T. W. Sands, 372 Lonsdale-street, Melbourne. The same firm has an improved Ironclad lamp, which gives brilliant lighting, and is economical in saving kerosene. Full details are available on application.

Fight the Insect Pest Successfully

—SPRAY WITH

NIK-KOF

The insect pest is the most dangerous of all to gardeners. It can ruin in a few days the work and care of many months, and yet, how many people know how to completely eradicate this danger at very little cost? "Spray with a good tobacco spray" is the advice often given in this journal. "Spray with NIK-KOF" is a more definite way of putting it. NIK-KOF will entirely free your plants and shrubs from aphids, thrips and other insect pests. It has given remarkable results—results which bring a never-ending stream of enthusiastic letters to our office. Write **NOW** for free folder fully explaining NIK-KOF's many uses.

4oz. bottle, 3/-; $\frac{1}{2}$ lb. tin, 5/6

Postage 6d. extra

5lb. tin, 27/6; 10lb. tin, 52/6

Freight Extra

FLEX-O-GLASS is definitely Recommended by Experts - -

Mr. H. J. Rumsey, lecturing to the N.S.W. Horticultural College, recommended the use of this amazing fabric for hot-beds, green-houses, etc. "I was so attracted by it," he said, "that I had a tomato house put up and covered with it." He then enumerated the many advantages he found it had over glass. The Hawkesbury Agricultural College has also experimented with, and advises the use of Flex-o-glass.

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36 ins. wide
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It admits the healthy ultra-violet rays which glass shuts out, promotes growth, costs less and is easier and cheaper to install. It cannot tear or break, and is impervious to weather. Order now, direct from us, and be assured you get Flex-o-glass, the **only** glass substitute, that has been used and recommended by the men who **know**.

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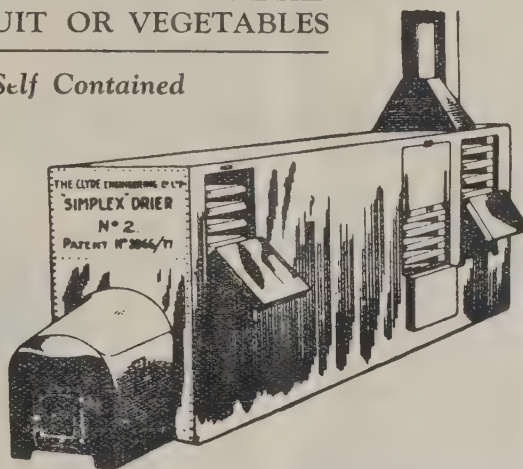
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GRANVILLE, N.S.W.



PORT OF MANCHESTER

Extracts from Official Market Reports

(Published weekly by British Minister of Agriculture) willingly forwarded to Growers, Exporters and others on application to address below. These records

PROVE Prices realised for Imported Fruit AT MANCHESTER Challenge Comparison

With results obtainable at any other market, as the following examples indicate:—

	Bull.		Liverpool.		London.		Manchester.	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
	quality.		quality.		quality.		quality.	
18/1/29. Oregon Newtowns (case) ..	15/6	13/6	15/-	13/-	13/6	11/-	17/-	14/-
American Greenings (barrel) ..	35/-	30/-	31/-	26/-	35/-	30/-	36/-	30/-
25/1/29. Oregon Newtowns (case) ..	15/6	13/6	13/6	11/6	14/-	11/-	16/-	14/-
York Imperials (barrel) ..	36/-	29/-	28/-	22/-	30/-	24/-	36/-	34/-
" Baldwins (barrel) ..	30/-	26/-	25/6	23/6	30/-	20/-	32/-	28/-
" Russets (barrel) ..	34/-	28/-	31/6	28/-	30/-	25/-	35/-	33/-

GROWERS AND EXPORTERS! WHY NOT SHIP DIRECT to the best market as your competitors do?

For information as to charges, selling brokers and importers, etc., apply to:—

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"Portoman," Sydney.

CAPTAIN W. J. WADE,
8 Bridge St.,
SYDNEY, N.S.W.

MORE and BIGGER EGGS

by using
KARSWOOD

In every district some poultry keepers achieve better results from their birds than others. We venture to say that three out of every four successful poultry keepers will be found to be users of Karswood Poultry Spice, and the fact that they continue to be users—as many of them have ever since Karswood Poultry Spice was introduced over 15 years ago—proves beyond all shadow or question of doubt that the use of Karswood Poultry Spice continues to bring them better results. Karswood Poultry Spice increases egg output because it is a blood enricher, and it is only by enriching the hens blood that plenty of rich-yolked full size eggs can be produced. Karswood Poultry Spice coaxes but does not force, because it contains no forcing ingredients, but does contain ground insects, the birds natural tonic stimulant.

Prove this to your profit—there is no need to put up with second-rate egg results when by feeding your birds on this simple Karswood system you can obtain every egg it is possible for them to lay.

A Convincing Test

Dear Sir,

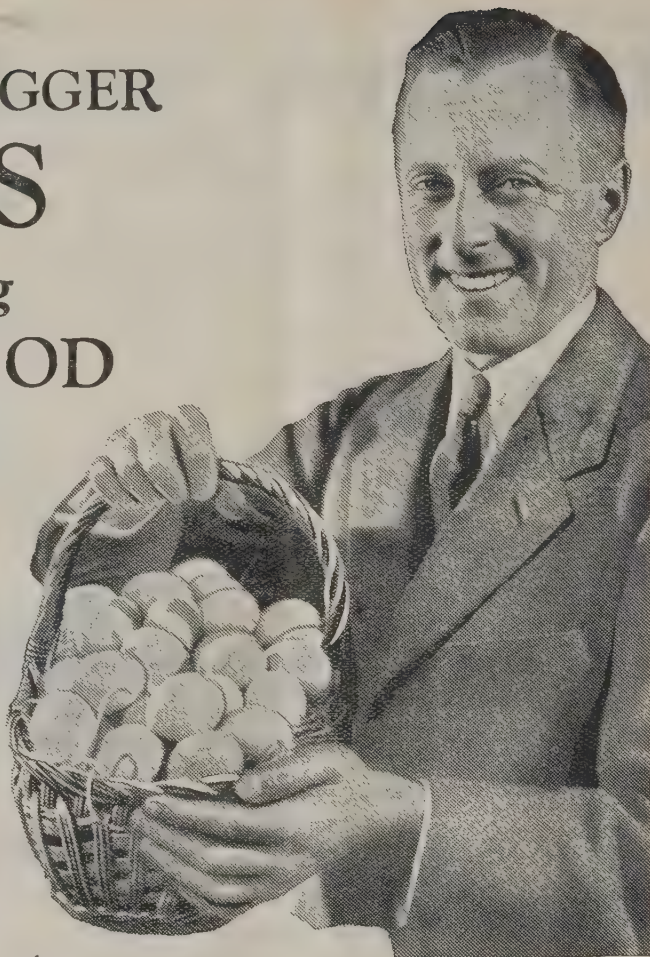
I have been using Karswood Poultry Spice for the last four years. I keep about 300 poultry, half of them free range and the other half on the intensive system. The ones on the intensive system are in five different compartments of 30 birds in each, all White Leghorns, equal in type and age. The three compartments Karswood fed in three months average:—

Jan. 601,	per compartment—	30 birds
Feb. 589,	"	"
Mar. 565,	"	"

Two compartments without Karswood Spice average for the same period:—

Jan. 397,	per compartment—	30 birds
Feb. 325,	"	"

Increases egg-production without forcing, because it contains ground insects but no cayenne pepper, etc.



Mar. 298, per compartment—30 birds
Reduction, 735 eggs.

Yours faithfully (Signed) W. UNSWORTH,
20th May, 1929. Thomas Estate, Shepparton, Vic.

Make this Test

Go to your local grocer, storekeeper, or produce dealer. Get a 1/- packet of Karswood Poultry Spice, then give it to half-a dozen of your birds, in accordance with the directions on the packet. Do not expect immediate results—Karswood works naturally, not suddenly. It takes at least fortnight to produce results, but they are good and sure.

Note the Economy

1/- packet supplies 20 hens for 16 days. 2/- packet supplies 20 hens for 32 days. 13/- (7lb. tin) supplies 140 hens 32 days.

Supplies

Karswood Poultry Spice is obtainable from all wholesalers and stores at the following standard retail prices:—

½-lb. packet, Price 1/-; 1-lb. packet, Price 2/-; 7-lb. tin, Price 13/-; 14-lb. tin, Price 25/-; 28-lb. tin, Price 48/-.

7.M.29

KARSWOOD POULTRY SPICE



MONTHLY REMINDERS.

October is a busy month for the hatching of chicks.

If chickens are hen-hatched, very little attention other than keeping them free from vermin, protecting them from predatory animals, and correct feeding are necessary.

The aim is to supply heat or to keep the chickens warm, and at the same time wean them from the brooders as quickly as possible.

No hard or fast rule can be laid down either for artificially heated or cold brooders.

A good illustration of the requirements of brooding is given by the hen.

Insanitary conditions not only pollute the atmosphere of the brooders, but are frequently the cause of serious epidemics of disease.

Where brooders and brooder-houses are thoroughly cleaned, vermin cause little or no trouble.

Brooder-houses should be cleaned out at least twice weekly, while a daily cleaning of the actual sleeping quarters is recommended.

When chickens are three to four weeks old it is generally necessary to remove them from the brooder-house to make room for younger ones.

This is also necessary to protect the soil becoming contaminated by growing stock.

THE APIARY.

Swarming and How to Deal With It.

UNTIL a beekeeper has passed through his first season, it is well to depend upon natural swarming for any increase required, writes Mr. E. A. Earp in the "N.Z. Journal of Agriculture." After a season's experience a more reliable method may be adopted for enlarging his operations. If increase by natural swarming is followed it is well to effect delay so far as the first swarms of the season are concerned. Very early swarms are not advisable, as the weather and flow of nectar are not al-

ways to be relied upon. Usually the swarms are smaller than when delayed, and many have to be fed should the weather prove unfavorable after they have been hived. On the other hand, when swarming has been delayed for two to three weeks the weather and flow of nectar are certain to be much more favorable. In any case, the swarms will be larger, and the work of the parent hive and the swarm will go on rapidly and without interruption.

One of the chief factors in delaying swarming is to enlarge the hive. By giving the colony a super more working room is provided, the nurse bees

"The Australasian Beekeeper"

The leading Bee Journal in the Southern Hemisphere.

A monthly magazine entirely devoted to beekeeping. Published in Australia for Australasian Conditions. Subscription (5/- per year, prepaid, post free), may start now.

Free sample copy available on application to the publishers, Pender Bros. Ltd., Box 20, West Maitland, N.S.W.

Successful and correct brooding will materially assist these operations.

Colony houses are possibly the most suitable for the housing of the chickens on leaving the brooder.

These can be built on slides or wheels and moved about or made fixtures.

Under either conditions netting yard is necessary to confine the chickens until they become accustomed to their new quarters.

After a week or ten days this can be removed, and, providing the rearing-houses are not too close, little or no trouble is experienced with chickens becoming mixed.

The number put out together, of course, varies with accommodation at your disposal, but larger flocks than 100 are not recommended, although cases are known where 300 were put out in one lot and no ill-effects experienced.

As the stock develop it is possible to cull out the cockerels.

This leaves more room for your valuable growing pullets, and protects them from the attentions of the cockerels.

A good size rearing-house for 100 chickens is one 10 ft. long, 8 ft. deep, 6 ft. high in front, and 5 ft. at back, with a 3in. space between the top of the back wall and roof to provide ventilation.

are kept busy, and the queen has additional combs in which to lay.

Unless there is a good honey flow, or if bad weather sets in, the swarms should be fed inside the hive. This is to give them a good start, and to provide them with material for producing wax. Excellent combs can be produced from sugar-syrup. Feed only the best white cane sugar. It is advisable in all cases to hive the swarm on full sheets of foundation, and thus take advantage of the natural instinct of the bees to produce wax after swarming. Very little time will be gained if the bees are put on to drawn-out combs.

The Fruit Trade

Market Reports and News Items

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Louey Pang & Samuel Wong Ltd., Thomas St., Haymarket.

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Mumford, J. G., 449 Flinders Lane.
Pang & Co. Ltd., H. L., Little Bourke Street.
Producers' Dist. Society, Western Market.
Ross, J. W., Western Market.
Silbert, Sharp & Davies, Western Markets.
Stott & Son, T., Western Markets.
Tim Young & Co. Pty. Ltd., Western Market.
Year, F. W., 49 William Street.
Woolf, G., Western Market.
Wholesale Fruit Merchants Assn., J. D. Fraser, Temple Court, 428 Collins St., Melbourne.

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Collard & Mackay, Fruit Exchange.
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Cooksley & Co., Fruit Exchange.
Geeves, H. V., Fruit Exchange.
Robsons Ltd., Fruit Exchange.

TASMANIA.

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E. R. Cottier Pty. Ltd., 38 Collins St.
Jones & Co. Ltd., H., Fruit Exporters.
Peacock & Co. W. D., Fruit Exporters, at London.

Launceston.
Bender & Co. Pty. Ltd., 100 Elizabeth Street.

NEW ZEALAND.

Dunedin.
Co-operative Fruitgrowers' of Otago Ltd.

GREAT BRITAIN.

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M. Isaac & Sons Ltd.
Margateston & Co. Ltd., Covent Garden.
Monro, Geo., Ltd., Covent Garden.
Poupart, T. J., Ltd., Covent Garden.
Ridley, Houlding & Co., Covent Garden.

Hull.
Connelly Shaw Ltd.
White & Son Ltd.
W. G. Gosling.
The Port of Hull, London and N.E. Railway. Rep., Major H. S. Cole, c/o Burns, Phillip and Co. Ltd., 7 Bridge St., Sydney.

Manchester.
The Port of Manchester, rep., W. J. Wade, 3 Bridge Street, Sydney.

Liverpool.
MacGeorge & Jardine.
Woodall & Co.

Bristol and Southampton.
Bristol Fruit Brokers Ltd.

Cardiff, Belfast and Dublin.
Connelly, Shaw Ltd.

Glasgow.
Russell, Turnbull & Co.

GERMANY.

Bremen.
Fruchthandel, Gesellschaft.
Hamburg.
Algemeene Vruchten. Import Maatschappij (also Cologne).
Astheimer, F. H., & Son, Fruchthof.
Heinz-Tiencken.
Lutten, J. H., & Sohn, Hamburg.
Stier, Aug., Fruchthof, Reps. J. B. Mills & Co., Bank House, Melbourne.
Timm & Gerstenkorn.

HOLLAND.
Amsterdam and Rotterdam.
Algemeene Vruchten Import, Maatschappij.

DENMARK.
Copenhagen.
Kobenhavns Fugtauktioner.

Overseas Markets.

Great Britain.

London.—The "Fruit, Flower and Vegetable Trades Journal," reports under date August 17:—

Covent Garden.—N.Z. Sturmers, 15/-, 20/-, colored varieties, 16/-, 22/- per bushel; Oranges, Californian, 25/-, 27/6 per case; South African Navels, 13/-, 22/6; Pears, Californian, Bartlett's, 21/-, 22/6 per case.

Spitalfields Market.—Australian and Tasmanian Sturmers, 20/-, 22/-; N.Z. Sturmers, 18/-, 20/-; Grapefruit, "Blue Goose," 32/6, 35/-; Jamaican, 30/-, 32/6; Californian, 26/-, 30/-, case 54 to 96; Pineapples, St. Michael, 2/6, 4/- each; Lemon, Messina, 300's, 15/-.

Hull (Commercial Saleroom).—Almeria Grapes, 8/3, 13/9 barrel; Grapefruit, Californian, sound, 100's, 23/-, 126's 21/6; Murcia Lemons, 200's 13/-, 300's 16/-, 20/-.

Liverpool.—Apples, N.Z. Dougherty, 22/-, 23/-; Sturmer, 22/-; Granny Smith, 20/-, 22/6; U.S. Gravenstein, 18/3, 18/9 per bushel; Oranges, "Sunkist," 21/-, 24/6.

Manchester.—Apples, English, 3/-, 4/- per 12 lb., 22/-, 24/- cwt.; N.Z., 20/-, 24/- per case; Grapefruit, "Sunkist," 22/-, 26/-; Florida, 28/-, 32/-; Peaches, English, 6/-, 12/- per doz.

Glasgow.—N.Z. Apples, Rokewood, Delicious, Dougherty, 20/-, 21/-; American barrel Apples, 18/-, 22/-; St. Michael, Pineapples, 2/6, 4/- each.

Germany.

Hamburg.—Details are to hand from J. H. Lutten & Sohn, giving prices at auction of 31,000 cases

Tasmanian Apples, ex "Hochst" and "Ferndale," Jon., 10/- to 19/3; Cleos., 15/-, 20/3; Dunn's, 12/9 to 20/-, etc. For the 12,500 cases, and 4,100 pkgs. Pears, ex "Delphic," on June 20. The demand was active; the fruit generally was in good condition.

Messrs. Timm & Gerstenkorn, have sent detailed auction sale reports for various ships:—7,300 boxes W.A., Tas., and N.Z. Apples, and 857 boxes W.A. and Tas. Pears, ex "Port Adelaide" and "Seamen," on July 4, W.A. Cleos. (24 and 2½), 22/-, 23/-; Dunn's, 20/9; Granny Smith, 21/-, 22/-; Democrat, 19/6.

Australasian Markets.

New South Wales.

Sydney (26/9/29).

Apples.—Tasmanian, dessert, Jonathans 10/- to 18/-, Democrats 14/- to 21/-, Croftons 14/- to 20/-, Scarlets 12/- to 17/-, Rokewoods 14/- to 18/-, Sturmers 11/- to 15/-, French Crabs 12/- to 16/-; local, dessert, 8/- to 13/-, choice to 18/-; Granny Smiths, 16/- to 22/- per bushel case. Bananas (genuine grades), special 33/- to 36/-, choice 30/- to 32/-; standard 24/- to 29/-, plain 20/- to 24/-, inferior 18/- to 19/- per case. Lemons, local, choice 12/- to 16/-, medium 10/- to 11/-, small 7/- to 9/-; irrigation, 8/- to 16/-; Mandarins, extra choice 18/- to 20/-, choice 14/- to 16/-, medium 8/- to 12/-, small 4/- to 6/-; Oranges, navel, choice 16/- to 18/-, medium 12/- to 14/-, small 7/- to 9/-; irrigation, 12/- to 16/-; Valencias, to 16/-; common, choice 14/- to 15/-, medium 10/- to 12/-, small 5/- to 7/- per case. Grapes, American, Red Malagas 25/- to 27/- per 32lb. cask. Loquats, 3/- to 10/-, extra choice 12/- per half-case. Passion Fruit, local, 3/- to 15/- per half-case. Pears, Victorian, 12/- to 22/- per bushel case. Pineapples, Queens., 10/- to 14/-, choice colored to 16/- per case. Strawberries, Queensland, 3/- to 5/- per tray, 9/- to 15/- per dozen boxes. Tomatoes, Queensland, 8/- to 16/-, repacked to 20/- per half-case.

Victoria.

Melbourne (1/10/29).

The following are the prices ruling at the Western Market:—Per case: Apples, good to choicest eating, 13/- to 18/-; cooking, 12/- to 16/-; few special higher; green Bananas, Queensland, special, 30/- to 31/-; choice, 29/- to 30/-; standard, 25/- to 28/-; plains, 19/- to 24/- per

double case; Lemons, to 12/- per case; Common Oranges, 10/- to 16/-; Navel Oranges, average quality to 15/-; special brands, 20/- to 21/-; Pineapples, Queens, 11/- to 14/- per double case; Grapefruit, medium, to 10/-; fair average quality, 14/- to 18/-; special higher; Tomatoes, Queensland, 11/- to 13/- half case; repacked to 15/-; Cucumbers, Queensland, 26/- per case.

The Federal Citrus Council of Australia reports that prices were as follows:—Navel Oranges, average standard shed pack basis, counts 126's upwards, 14/- to 15/-; other shed pack standards, to 20/-; few selected lines, 21/-; specials, to 22/-; Mandarins, best to 22/-; Common Oranges, 16/-; Grapefruit, plains, 14/- to 18/-; average standard, 18/- to 22/-; few special, 25/-; Seville, 8/-; Lemons, best counts, 14/-.

Queensland.

Brisbane (25/9/29).

Oranges, Valencia, 13/- to 15/- a bushel case, second crop colored, 9/- to 11/-, green 5/- to 7/-; Navels, 10/- to 14/-; Mandarins, Glens, 16/- to 20/-, green and small 8/- to 14/-; Scarlets, 13/- to 18/-, green and small, 7/- to 10/-; Emperors, 14/- to 17/-, green and small 8/- to 12/-; Excelsiors, 10/- to 13/-; Kings, 10/- to 14/-; Waratahs, 10/- to 13/-; Feutrals, 9/- to 11/-; Lemons, 3/- to 5/- a quarter-case; Limes, 3/- to 5/-; Grapefruit, 3/- to 5/-; Passion Fruit, 6/- to 14/-; Custard Apples, 3/- to 6/-; Loquats, 6/6; Papaws, ripe, specials, 8/- to 10/- an Orange case, others, 5/- to 7/-, 5/- to 7/- a dump, others, 2/- to 3/-; Pineapples, smooth 6/- to 11/- a case, 1/6 to 6/- a doz., rough 9/- to 11/- a case, 2/- to 7/- a dozen; Strawberries, 8/- to 9/- a dozen boxes, others 6/6 to 7/-; Cape Gooseberries, 1/1 a quart.

South Australia.

Adelaide (28/9/29).

Apples (eating), 18/- to 20/- per case; cooking, 15/- to 18/-; Bananas,

36/-; Lemons, 8/- to 10/-; Melons (pie), 10/- to 12/- per cwt.; Nuts (Almonds), 11d. to 1/- per doz. lb.; Brazil nuts, 12/-; Coconuts, 4/- per doz.; Peanuts, 11/- per doz. lb.; Walnuts, 11/-; Barcelona, 12/-; Oranges (Common), 10/- per case; Blood, 11/-; Navel, 16/- to 18/-; Passion Fruit, 36/-; Pineapples, 24/-.

Western Australia.

Perth (23/9/29).

Apples, Dunn's Seedlings, dumps, 13/- to 18/3 (others from 10/-); Rome Beauty, 14/- to 18/9 (others from 10/-), small from 6/-; Yates, 14/- to 21/- (special to 25/-, small from 5/-); Granny Smith, 14/- to 20/9 (inferior from 9/-); Cleopatra, 10/- to 17/6 (others from 8/-); Dougherty, 12/- to 18/6 (special to 20/-, others from 7/-); other varieties, 12/- to 18/-; Delicious, to 20/9, small from 3/6; Oranges, plain flats, 6/- to 14/-; dumps, 9/- to 15/- (special to 17/3); Navel, 9/- to 15/- (special to 17/9, others from 4/-); 12/- to 17/- (special to 21/3, others from 9/-); Lemons, 4/- to 9/6 (few from 2/9); Mandarins, 9/- to 14/3 (small from 3/-).

Tasmania.

Hobart (21/9/29).

Prices ruling:—S.T.P., 7/- to 11/6; Dem., 9/- to 12/6; Delicious, 14/- to 16/-; C.P.M., 8/- to 12/6; R.B., spotty, 3/6 to 5/-; S.P.M., spotty, 4/- to 7/-.

New Zealand.

Dunedin (19/9/29).

Messrs. Reilley's Central Produce Mart report prices ruling as follows:—Apples, Delicious 10/- to 15/6, Jonathans 7/- to 8/-, Sturmers 7/- to 10/-, others 3/- to 6/-; cooking 5/- to 7/6. Dessert Pears, Winter Coles 6/- to 10/6, Winter Nelis 9/-; cooking Pears, 6/-; Passions, Australians 23/9. American Grapes, 27/6. American Valencia, 40/-; Victorian navels, 22/6, special quality 27/6. Lemons,

Missions, 62/6; Australian, 25/-; Grapefruit, 40/-; Bananas, ripe, 25/-; Cocoanuts, 16/-.

FRUIT BARROWS IN BRISBANE.

The Brisbane City Council is endeavoring to limit fruit barrows in city limits. A deputation from the Council recently waited on the Home Secretary, stating that barrows were a menace to traffic, and also competed unfairly against shopkeepers who had high rents to pay.

In reply, the Minister said he was not convinced that barrows were a menace: they supplied a healthful product at low prices to the public.

"GRAVELY" GARDEN TRACTOR.

A Useful, Compact Unit.

The "Gravelly" garden tractor is specially designed for row crops and market gardens, small vineyards and florists' gardens, and with equipment for shallow and deep cultivation should prove a most useful power cultivator.

The width of the tractor is only 13½ in., and, as the various cultivating implements (which are fitted in front), are all made to "straddle" rows, the cultivator can be used with safety in the narrowest rows.

The implements that can be used with this tractor are:—Turn plough, 12 in. furrower, weed cutter, scuffer, cultivating tynes; can also be used for sowing crop and fertilising. When ploughing puts the grass and stubble in the bottom of the furrow and leaves a nice uniform job.

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Importers and Exporters.

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'Phone: Cent. 4417.

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Further information may be obtained by communicating with—

GEO. LISTER PTY. LTD.

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Reliability

goes hand in hand with Goodman's Trees—which are backed by 40 years' experience in growing all kinds of Fruits, Ornamentals, etc.

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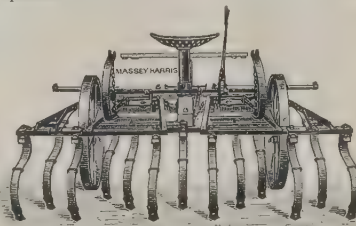
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GOODMAN'S NURSERIES

BAIRNSDALE — VICTORIA.

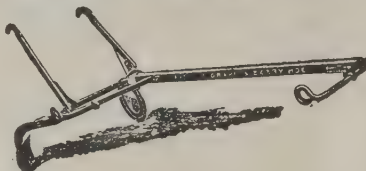
Massey Harris Orchard and Vineyard Implements

EIGHTY-THREE years' experience in the manufacturing of implements for the farmer and orchardist are behind the complete range of machines that are available from the Massey-Harris Co. There is a Massey-Harris implement for every purpose.



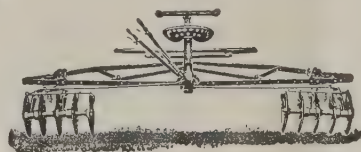
Nine-Tooth Orchard Cultivator.

This cultivator is useful for vineyard or for ordinary field cultivation. The steel teeth with reversible points may be set to cultivate behind the wheels. For orchard work, extensions can be furnished, as illustrated, which cultivate under the over-hanging branches of the trees. Pole and trees or forecarriage optional.



Grape and Berry Hoe.

This is an excellent implement for the cultivation of Grapes, berries, Peaches, Plums, and small trees of all kinds. It can be adjusted to different widths of rows, and the horse hitches to the side of the pole, out of the way of vines and bushes.



Orchard Disc Harrow.

Illustrated Folder Free on Application.

Orchard Extension Disc Harrow.

This implement is reversible and covers the roots or not, as you wish. The gangs are interchangeable in their position on the frame so as to throw the soil to or from the trees and vines. It is adjustable to different depths of cultivation. The extension arrangement as illustrated allows for cultivation under the trees without injuring the branches. Supplied with 10 or 12 16-inch discs.



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By means of a lever the teeth can be set to work at different cutting angles with relation to the soil. Each tooth is fitted with a reversible point, which gives it double wear.

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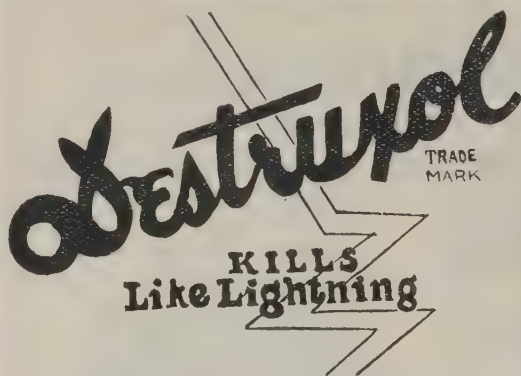
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c/o Murdoch Bros. Pty. Ltd., Market Place, Hobart.

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The All-in-one Spray

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2. Where other sprays must be used at certain seasons or times of day to avoid damaging fruit and foliage, this spray may be used at any time **WITH ENTIRE SAFETY**.

3. While other sprays must often be used five or six times per season, **DESTRUXOL** requires but **ONE**, or at most, two applications.

4. Furthermore, **DESTRUXOL** is sold in concentrated form, requiring only the addition of water to make the finished spray.

5. The **ECONOMY** of **DESTRUXOL** can be demonstrated with one application. Its effect can be shown in any affected orchard, field or garden in a period ranging from 30 minutes up to 5 hours in very exceptional conditions.

DESTRUXOL EMULSION

a stable emulsion versus heavy quick-breaking MINERAL OIL EMULSION and the reason why the **DESTRUXOL EMULSION** has been accepted by the growers of citrus and deciduous fruits, vegetable growers and lovers of flowers.

DESTRUXOL is a contact and fumigating spray. It has been distributed for years and is recognised as one of the few materials in the line of insecticides on the market to-day able to combat insect life in the stage of migration without doing damage whatsoever to fruit, bloom or foliage under any climatic condition, whether favorable or adverse. It has done invaluable service, not only in the temperate regions, where the deciduous fruits abound, but for the past few years also in the semi-tropical regions, where the Citrus fruits prevail and where it has been used successfully in the combating of various kinds of Scale in the migratory state, as well as of other insects. It is paramount in the control of Mealy Bug, Red Spider, Thrip, and all species of Aphids.

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Extra quality fruit at no extra cost

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Any difficulty in procuring supplies, apply to:—



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Having handled Australian apples for the past 20 Years, we are in a position to give the best service in the disposal of the fruit at a minimum of expense.

Hamburg is the distributing centre for an immense area of the continent of Europe, where there is a growing demand for Australian apples.

We require much larger quantities, and invite growers to ship through our Victorian representative:

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LIVERPOOL**Woodall & Co.****FRUIT BROKERS,****Temple Court, Liverpool.**

Liverpool, situated in the county of Lancashire (which has a population larger than that of Australia), possesses every facility for the quick distribution of fruit.

Auction sales are held at the Liverpool Fruit Exchange every Monday, Wednesday, and Friday, and are attended by buyers from all parts of the United Kingdom.

Our long experience enables us to handle Australian fruit to very best advantage. We require

BIGGER SHIPMENTS.

Advances made to cover cost of packing, and shipping expenses.

Australian Growers!**Consign to—****Woodall & Co.**

Consult our Melbourne Agent:

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FRUIT BROKER
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Rapid Handling

Best Prices

Low Charges

Hull, possessing the second largest fruit market in the United Kingdom, serves a large consuming population in the busy industrial centres of England and Scotland.

Specially constructed refrigerator vans carry the fruit direct from the steamer to inland destinations by express trains.

Hull occupies an unrivalled position for the re-export of Australian fruit to the Continent. Several regular lines of steamers trade to all ports in northern and central Europe.

We have handled Australian apples for many years past, and have built up a large and increasing trade. We require

THOUSANDS OF CASES MORE THIS SEASON
than we received in 1928—the last big year.

We strongly emphasise the need for accurate sizing and firm packing in order to maintain and expand the demand for Australian fruit. We can do the rest.

THE BEST ADVERTISEMENT FOR ANY FIRM IS TO SHOW SATISFACTORY FIGURES FOR THE GROWER IN THE LAST LINE OF THE ACCOUNT SALES. COMPARE OURS.

Victorian Agent:

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Who will supply Cases, Labels, Wrapping Paper, Picking Bags, and all Packing Requisites.

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Sales on commission by private treaty only. We do not buy from any source.

We occupy extensive premises in the main street of the NEW SPITALFIELDS MARKET EXTENSION—the largest fruit and vegetable market in the United Kingdom. Our facilities for rapid and efficient handling are unsurpassed.

Spitalfields (the nearest market to the London Docks and Wharves, with railway connections to all parts of Great Britain), has recently been remodelled on up-to-date lines at a cost of £2,000,000. It possesses roads and approaches far in advance of any market in London, thus providing for the increasing motor transport.

In addition to 7,000,000 potential consumers in the Metropolis, we have customers in practically every town of importance in the British Isles: therefore, we are in a position to place consignments where the keenest demand prevails.

Every consignment received is sold on its merits, strictly in accordance with the HORTICULTURAL PRODUCE (Sales on Commission) ACT, 1926, and each individual sale recorded; therefore, consignors can be assured of receiving exactly the same price as their fruit realises.

Private sales have a distinct advantage over auction sales, the former ensuring more stable prices. Average prices obtained are ample proof of this.

We strongly recommend accurate grading, and a uniform weight of 40 lbs. to the case; also that no 2½in. or 3in. Jonathans be shipped: then a higher average price will automatically result.

Our results have pleased Australian growers in the past—especially in the big season of 1928. With our improved facilities we can, with advantage,

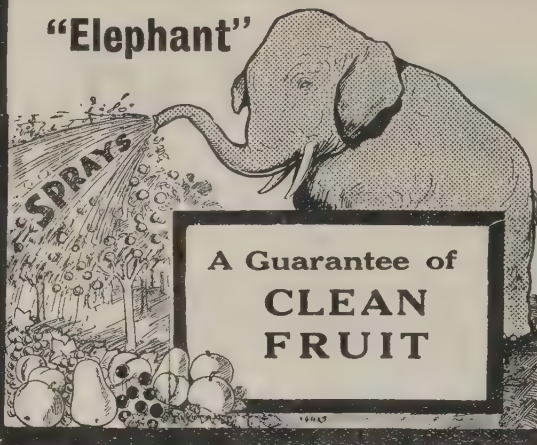
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Consignments also desired from Western Australia, but only from reliable, genuine packers.

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Spraying is essential, and your best Insurance. Therefore it is necessary to use only the Best Sprays obtainable.

The successful grower uses

"Elephant" Brand

Sprays Only

**Don't Neglect Your Spraying
Order Now—**

Arsenate of Lead

Paste or Powder

We strongly recommend growers to use Paste, as we feel certain they will obtain better results than by using Powder.

Paste is finer and more adhesive.

For growers who intend using Oil to help control the Codlin Moth, we can supply you with a White Oil Emulsion similar in all respects to the imported article, and at a lower price.

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LATE NEWS.

Victoria.

Pomonal Escapes Frost Damage.

As we go to press a telegram is to hand from Mr. R. E. Fowler, of Pomonal, as follows:—

"Pomonal escaped all frost damage; big Apple crop; exceptionally clean fruit expected."

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Manures, Fertilisers, &c.—

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Australian Sulphate of Ammonia Propaganda Committee, 360 Collins St., Melbourne, p. 448.

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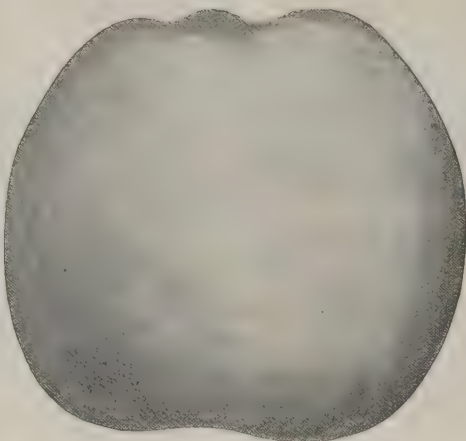
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Delicious

FRUIT TREES

Mr. Commercial Grower!

AN OPEN LETTER

Vast possibilities await the man who looks ahead—not next year or the year after, but for many years. Can he visualise the millions of people in this great universe who want fruit? Now, Sir! think for yourself—a marketing business has been instrumental in placing before these fruit-hungry people the ways and means of supplying this great necessity of life.—One man, first try, first season, sold 55,000 cases Apples, and this season something like 120,000 will be the figures sold in this way. It has been done, and will be done, that we venture to say that in 5 years hence Australia will not have a surplus, but a shortage of hundreds of thousands cases of fruit. Get busy—for your old orchards will be going back, and you will not have the fruit when required. Get in on the boom.

Information, etc., from

JOHN BRUNNING & SONS
SOMERVILLE NURSERIES - SOMERVILLE - VICTORIA - AUST.
 Established 1866. Code: Bentley's Complete Phrase.

"FRUIT WORLD OF AUSTRALASIA."

Representing the Deciduous, Citrus and Dried Fruits Industry of Australasia.

Published the First of Each Month.

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Articles and Photographs.—The Editor will always be very pleased to receive articles and photographs for publication. Articles on spraying, pruning, drainage, marketing, and other cultural matters, and reports of meetings, are welcomed. Please write on one side of paper only; include name and address (not necessarily for publication). Press matter sent in an open envelope, marked "Printers' MSS.," postage rate: 2 ozs., 1½d. Photographs, if sent in an open-ended package, marked "Photos. only," will travel at 2 ozs., 1½d. A short description of the photos. should be written on the back.

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THE A B C OF APPLE PACKING.

A BULLETIN has recently been issued by the Department of Agriculture, New South Wales, entitled the "A B C of Apple Packing," by Mr. H. Broadfoot, Special Fruit Instructor.

He commences with the Canadian and Australian cases, these being the most widely used in New South Wales. The inside measurements of these cases are as follows:—Canadian: Length, 20in.; width, 11½in.; depth, 10in. Australian: Length, 18in.; width, 8-2/3in.; depth, 14½in.

Then follows the construction of cases, length and gauge of nails to be used, lining paper, the use and misuse of wood wool, packers, grading for size, grading for quality, wrapping, range of size, spring, or bulge, wiring, nailing and nail stripers, gravity conveyors, stencilling and labelling, list of case-marking abbreviations, stacking, measurements of standard fruit cases. Then follow some summarised points in packing. There are numerous illustrations of packing of the Canadian and Australian bushel cases, with such varieties of Apples as Jonathan, Granny Smith, Delicious, Rome Beauty, Tasmania, and London Pippin.

The Bulletin is obtainable from the N.S.W. Department of Agriculture, Sydney.

Irrigation and Plant Studies.

(By A. V. Lyon, M. Ag., Sc., Officer in Charge Commonwealth Research Station, Merbein, Vic.)

IRRIGATION AND PLANT STUDIES formed the subject of an interesting address recently by Mr. A. V. Lyon, M. Ag., Sc., officer in charge, Commonwealth Research Station, Merbein, before a large meeting of fruit-growers at Merbein.

Mr. Lyon stated:—

I propose to deal with some of the more urgent problems arising from the application of water to the soil, in relation to the soil itself, and the plants grown therein. The history of irrigation settlements throughout the world indicates that after a few years of irrigation, marked chemical and physical changes occur in the soil. The general trend of these changes is to make the soil less suitable for plant life, and ultimately portion or the whole of the irrigation settlements may be rendered unproductive.

We are, in recent years, becoming a little more enlightened in regard to the causes of deterioration, and more definite lines of investigation are becoming apparent to present-day workers.

Soil Examination.

ONE OF THE EARLIEST methods was to describe soil by reference to the native vegetation. In young countries, such as Australia, this method is probably still of greatest importance, particularly as the holders still remember or have had handed down to them descriptions of the native vegetation of their holdings.

The characteristics of the soil thus became associated with the native vegetation and forms a useful basis for judging the capabilities of similar unsettled areas.

In many of the older countries, however, these records have been lost, and the land is described wholly by other means. A generation ago

chemical and mechanical analyses

of the soil were considered of chief importance; the chemical examination dealing with the various plant foods and also harmful substances, and the mechanical analyses giving the proportions of sand, silt and clay in the soil. These methods have been supplemented in recent years by a study of the soil profile.

This method consists of digging a hole, or bringing up sections of the soil by boring plants, and describing the various layers of soil to a depth of several feet. The mechanical and chemical analyses are now used mainly to describe the various soil layers, and are not of themselves held to be an adequate description of the soil.

In dry-farming areas the examination is usually limited to a few feet, as the soil below the depth of the percolation of the rain water is of little interest. On irrigated and proposed irrigated areas the soil is examined to much greater depths.

Present-day Irrigation Methods.

IT IS USUALLY RECOGNISED nowadays that the aim in irrigating is to moisten the soil to the depths, or a little beyond the depths, at which plants operate and at which soil moisture changes occur. A study of the irrigation requirements of any plant, say the Sultana, would include investigation of the following points:—

1. The range of soil moisture over which the plant will grow satisfactorily in each soil type.

2. The frequency of irrigation in order that the soil should not dry beyond the effective minimum. This will naturally vary with the different plants, with seasonal and climatic changes and with soil types.

3. The method of irrigation which will most satisfactorily moisten the soil to its full field capacity.

The determination of actual soil moisture requirements entails careful and systematic research over a period of years. Until such work has been effectively undertaken, under conditions where the water supply is under the control of the experimentalist, the present policy of irrigating before plants suffer must be continued.

There are in Australia three main methods of irrigating:

1. The furrow method.
2. The flooding system.
3. The spray system.

Undoubtedly the spray system is more efficient and more easily controlled than the other two. It is economically employed for permanent plants such as citrus, which give a high capital value to the land and for annual crops of high value. For the majority of our products the capital cost of installation is considered too high.

The flood system, by which level tracts of land, or bays, are rapidly filled with water, is practised with many fodder plants.

For horticultural plants the furrow system is used most extensively and, in fact, is almost entirely adopted in the Mildura district.

The cutting of feeding roots

should be an early, preferably before sprouting, operation, in order that new roots may be established before much foliage appears. The prevalent opinion that young roots must grow before the new season's foliage appears is not correct, as the vine has a highly specialised system for absorbing moisture and the roots established in previous years function quite effectively.

All root studies indicate that the productivity of land is intimately connected with the depth of the humus containing soil. Cultural operations should therefore be directed toward making the soil as deep as possible. Deep working, particularly prior to the growth of cover crops, is valuable in this respect.

Pruning Methods.

THE QUESTION OF PRUNING is essentially a practical one, and nearly all that is known on this subject has been gathered by the growers themselves simply by noting the effects of certain operations.

There are two or three directions, however, in which systematic experiments and observations can bring about improvements. Many Grape growers discuss pruning in reference to yield (total), whereas the primary purpose of the operation is to improve quality and to give regularity to production.

All pruning studies then, and all pruning results, should refer to the size, sugar content, and general quality of the fruit.

For example, an unpruned vine, for the first years, at any rate, will bear very much more than a pruned one. Yields of one to one and a-half cwt. of fruit per vine can reasonably be expected from unpruned Sultana vines in our district, if growing on good soil, adequately worked and watered. The fruit, however, is of inferior quality, small berries, delayed ripening, and low sugar content being invariable characteristics.

From this point of view then, the first problem is to determine how much reduction is necessary to maintain quality. In this district, six to eight canes under present methods of working, are accepted by the majority of people as a suitable quantity of wood to leave on the vine.

For further progress, the real problem is to increase the number of bunches without decreasing the quality, and pruning problems are thus inevitably associated with the general routine work of the vineyard, particularly methods or irrigating, manuring, and working the land.

Several very significant results have been shown by recent experiments. The first of these is that the quality of the bunch is very much in proportion to the size of the shoot on which it is borne. This applies particularly to spur pruned varieties, such as the Zante Currant; and to some extent to the cane-bearing varieties like the Sultana. This being so, any changes in pruning practice must provide for sufficient growth of the individual shoots.

If too much bearing wood is left, small shoots with inferior quality and delayed ripening must result. This does not mean that all growers should necessarily adopt a minimum of six to eight canes, but it does mean that the maximum, whatever it may be, should be reduced to the point at which satisfactory fruit is obtained under the system of working adopted by the grower.

The Bearing Powers of Sultanas.

Another point of interest is the proportionate bearing powers of Sultanas. If vines are classed, in order of vigor, by measuring the amount of annual wood growth, it is found that the vines of greatest vigor can carry the shoots from more canes, and produce more fruit than those of lesser vigor. This being so, we are justified in leaving more wood on the vigorous vines and endeavour to increase acreage yields by making the vines as vigorous as possible.

Complete records, showing the location of the fruit buds along the canes have now been kept for two seasons. These show remarkable uniformity, there being on average canes a steady increase up to the fifth bud and a steady decline from about the eleventh or twelfth. The point

of maximum fruitfulness is further out on long strong canes and closer in the weaker ones. This information confirms present general practice whereby the stronger canes are pruned to greater lengths.

Experimental Methods.

I WILL CONCLUDE with a brief account of research methods. One difficulty in field experiments is to determine suitable methods by which results can be noted and recorded.

Total yield is valuable, but we can obtain more information by finding out how the total yield is produced. A complete analysis of the Sultana, for instance, can be obtained as follows:—

1. Count of number of buds left at pruning.
2. Sprouting count showing the percentage of buds which develop shoots.
3. Fruiting count showing the proportion and location of the fruit shoots.
4. Flowering and setting counts showing the proportion of flowers which form berries.
5. Weight of individual bunches.
6. Size of bunches and average size, weight, and sugar content of berries.
7. The ripening curve showing development of sugar.

Records outlined in this way are very useful. For example,

the application of fertilisers, or of a particular fertiliser, may affect fruitfulness.

Excess nitrogen in some trees has been found to decrease the proportion of fruit buds and so decrease yield. The sprouting count will probably become all important in determining soil moisture requirements at bud burst; and the growth rate gives information in regard to the frequency of irrigations and the soil moisture requirements throughout the season.

By such methods a little is being added each year to the sum of human knowledge and gradually becomes incorporated in practice. The net result of experiments, public and private, in this district has been a steady increase in acreage yields, and it is interesting to note that in this district alone average acreage yields have broken all previous records twice within the last five years.

Late Frosts.

Severe Damage to Fruit Crops in Victoria and N.S.W.

MUCH damage was caused to fruit and Tomato crops in portions of Victoria and New South Wales on October 22. Harcourt, a prominent Apple-growing district, suffered severely, the growers, particularly in the valleys, losing a considerable portion of their crop.

From present appearances it would appear the expected crop has been reduced by 50 per cent. In the Goulburn Valley the Grape crop has been heavily reduced. Other reports are as follows:—

Murrumbidgee Irrigation Areas.—Considerable frost damage to vineyards. The effects were patchy, some

vineyards being severely harmed, others untouched. Early Tomato, Bean and Potato plants were destroyed.

Ardmona.—Frosts did severe damage to Grape vines and young Tomato plants.

Ararat.—The Great Western Vineyards suffered severely by frost. On the low-lying areas all the vines were cut back, although the frost alarm signal was given and fires were lighted to provide smoke screens.

Campbell's Creek.—Frosts caused severe damage to the developing Apple crop.

Lavington (N.S.W.).—Severe damage to the vine and fruit crop, including Peaches.

The famous 161-year-old vine at Hampton Court Palace had a crop of 500 bunches of Grapes this year.

CHAFFEY MEMORIAL.

At Mildura recently, a bronze statue of the late Mr. W. B. Chaffey, C.M.G., was unveiled, and the trust deed of the George and W. B. Chaffey scholarship was handed to the Minister for Education.

The late Mr. W. B. Chaffey was popularly known as the "father" of Mildura; a man of outstanding ability and sterling character, who has left his work for all time on Australian development.

OBITUARY.

Mr. J. S. Gaudion, of Wandin Yallock, Vic., who died suddenly from heart trouble on September 15, was widely esteemed. He took an active interest in the affairs of the district. Our sympathy is extended to the family.

The Harvesting and Packing of Passion Fruit.

Seasonable Practical Hints.

(By Basil Krone, Fruit Packing Expert, in "Victorian Journal of Agriculture.")

UNTIL RECENTLY the grading and packing of Passion Fruit was regarded as superfluous. Experience during the last few years, however, has shown that attention to these details pays handsomely. In some instances as much as 5/- per case, and 3/- per half case, has been the difference between the price paid for carefully graded and packed fruit, and the price of the ordinary "orchard run."

The market of to-day definitely proves that in every consignment of ungraded, unpacked Passion Fruit, the producer not only loses pence, but shillings per case. Therefore, it is desirable that all grades and packs be standardised.

velopment suggested in the previous paragraph, and, when possible, this operation, as well as the packing, should be conducted in the very early morning, or late evening.

4. In some hot districts it has been found preferable to pack the fruit, lid the cases, pile them closely together, and cover the stack with damp bags until just before they are to be removed to the train rather than to leave the fruit on the bench, say, overnight.

5. The fruit should be harvested daily. The wind-falls should be picked up first; a couple of hours in the hot sun will ruin this grade.

6. Passion Fruit must always be handled carefully so as to avoid damaging the cuticle.

Grading.

Strict attention must be given to the elimination of "dummy" fruit. These may be discerned by their extremely light weight, and with a little practice the packer can easily detect them. Shrivelled Passions should never be packed in the same case as fresh fruit.

No regulations dealing with the

grading and packing of Passion Fruit have been made, but it is suggested that they be sorted into three grades, namely:—

Special.—Large sized (full of pulp) and free from "dummy," "woody," or shrivelled specimens.

Standard.—Medium sized (full of pulp) and free from "dummy," "woody," or shrivelled specimens.

Plain.—Small sized (full of pulp) free from "dummy" specimens, but this grade may include those of any size that are shrivelled or affected by "woodiness" of the skin.

Sizing.

This is best carried out during the operation of packing, when cases to hold large, medium and small sizes respectively can be placed side by side and packed at the same time, this will facilitate the work. Fig. 1a gives an idea of how the work can be arranged for the comfort of the packer.

Grading Passion Fruit is made easier if three cases be packed at the same time, and filling them with large, medium, and small-sized fruits respectively.

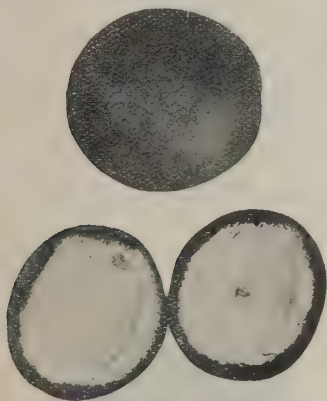


Fig. 1.—A "Dummy" Passion Fruit.

Strict attention should be given to the elimination of the "dummy" fruit. With a little practice these can be easily detected on account of their extremely light weight.

Successful marketing of the Passion cannot succeed without good harvesting. The degree of maturity at which the fruit is picked is vital.

1. At the beginning of the season the fruit should not be gathered until it has completely changed to its darker color, but long before any sign of shrivelling appears.

2. As the season advances, the fruit should be gathered when it is a little more than three parts suffused with color. This degree of maturity will ensure the complete development of the ripening process, and the fruit will be quite black by the time it reaches the market.

3. In hot districts the fruit should be gathered while in the state of de-

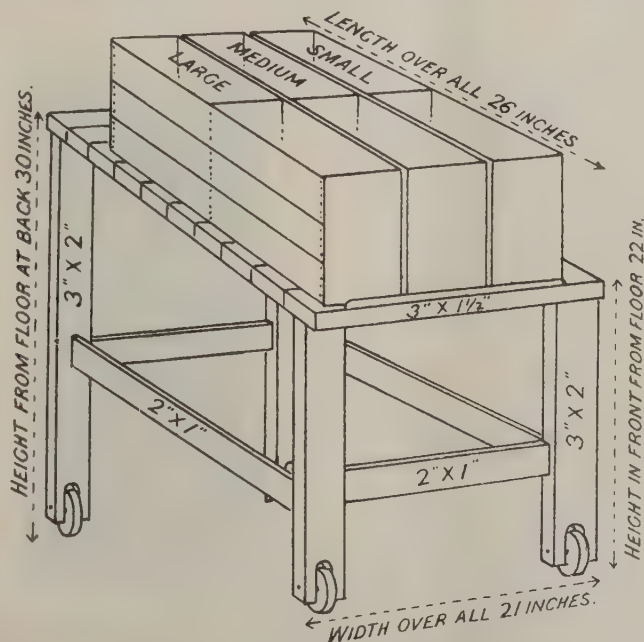


Fig. 1a.—A Packing "Trolley."

Packing.

The increasing popularity of the "diagonal" pack is a proof that it has found favor amongst Passion Fruit growers. With this system the quantity of fruit in a case can be ascertained at a glance, and thus buying or selling by counts or dozens is facilitated.

The Long Bushel and Half Long Bushel Cases.

Packing Passion Fruit is a very simple process. Those who use the long bushel or the half long bushel case will find that the 2-2 (two-two) packs will pack most of their fruit, while it may be necessary to employ one or two 3-2 (three-two) packs for

the very small sizes, and perhaps one or two 2-1 (two-one) packs for the very large sizes for the packing of the Black Mammoth variety.

The Half Dump Case.

Those who use the half dump case will find that the 3-3 (three-three) pack will suit practically all sizes, though here again, with the Black Mammoth a variation may be necessary, and the 3-2 (three-two) pack will be found the best for extremely large sizes.

When used in hot districts the half dump case should be made with reasonably close-fitting boards. Lining paper is then unnecessary, but a very thin layer of wood-wool at both top and bottom of the case is recommended. This will retard evaporation, and prevent the fruit opening up in a shrivelled condition.

The packing of the half dump case is very similar to the long or half long bushel cases just illustrated, except that 3-3 (three-three) packs will be required instead of the 2-2 packs; 3-2 packs may be necessary if the fruit is exceedingly large. Figures 6 and 7 illustrate the method of placing the Passion Fruit in the half dump case so as to form the 3-3 and 3-2 packs.

The correct method of placing the first and second layers of fruit in the different styles of cases is shown in several illustrations. Illustrations are also given showing the correct "layer counts" in the various packs

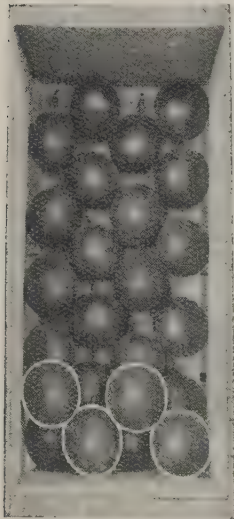


Fig. 2.—Correct method of placing first and second layer of the 2-2 pack in the Long or Half Long Bushel Case.

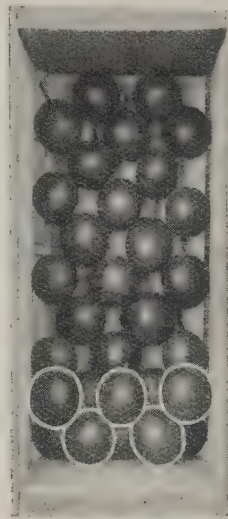


Fig. 3.—Correct method of placing first and second layer of the 3-2 pack in the Long or Half Long Bushel Case.

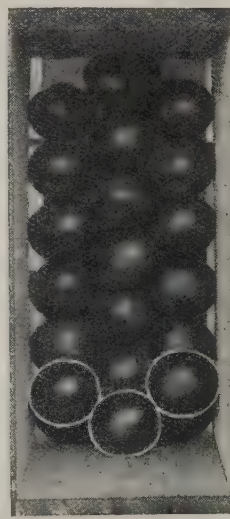


Fig. 4.—Correct method of placing first and second layer of the 2-1 pack in the Long or Half Long Bushel Case.

The fruit in the second and succeeding layers should rest in the pockets or spaces caused by the fruit beneath, and not directly on top of them.

Note.—All stalks in the 2-2 and the 3-2 packs face in the same direction except the last fruits in each layer, which are reversed. All stalks in the 2-1 pack face the centre, otherwise the fruit will not reach the desired height when the packing of the case is finished.

Cases.

New cases and white lining paper enhance the value of the fruit. Specifications of the cases used should be as follows:—

Long Bushel Case.—26 x 6 x 14½ inches (inside measurements clear of the division).

Half Long Bushel Case.—26 x 6 x 7½ inches (inside measurements clear of the division).

Half Dump Case.—18 x 8-2/3 x 7½ inches (inside measurements).

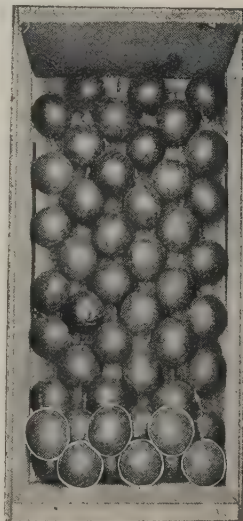


Fig. 6.—Correct method of placing first and second layer of the 3-3 pack in the Half Dump Case.

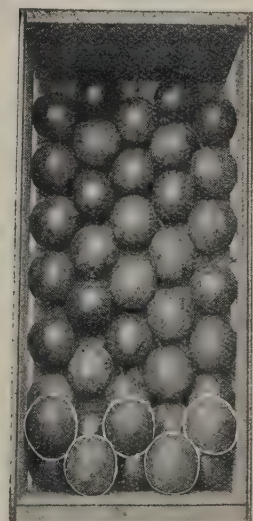


Fig. 7.—Correct method of placing first and second layer of the 3-2 pack in the Half Dump Case.

used for most of the commercial sizes of Passion Fruit.

Correct Height of Fruit in Cases.

Packing Passions to the correct height in the case and the "snugness" of the specimens in each layer are the important features for safe carriage over long distances.

The top layer of Passion Fruit should be from three-quarters to one inch above the top in the long bushel case, and from half to three-quarters of an inch in the half cases before the lid is nailed on.

Packages wherein the top layer is just level will be low and arrive slack, while the reverse means damaged fruit.

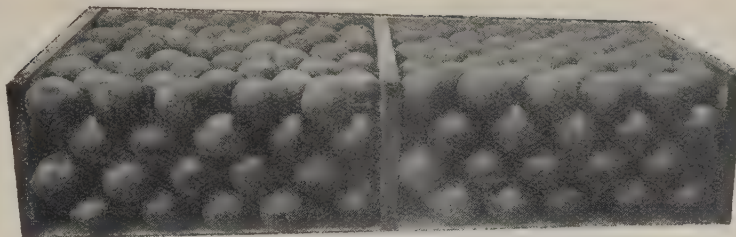


Fig. 5.—The 2-2 pack, 5 x 5 layer, 10 layers. Total 400 or 33 dozen and 4.

Nailing Down, Etc.

This is an important operation, as the fruit may be easily damaged. Do not nail down on a hard or uneven

floor. Place battens beneath each end of the case, or use a nailing down bench to lessen any severe pressure from the centre of the package. (See Figs. 9 and 10.)

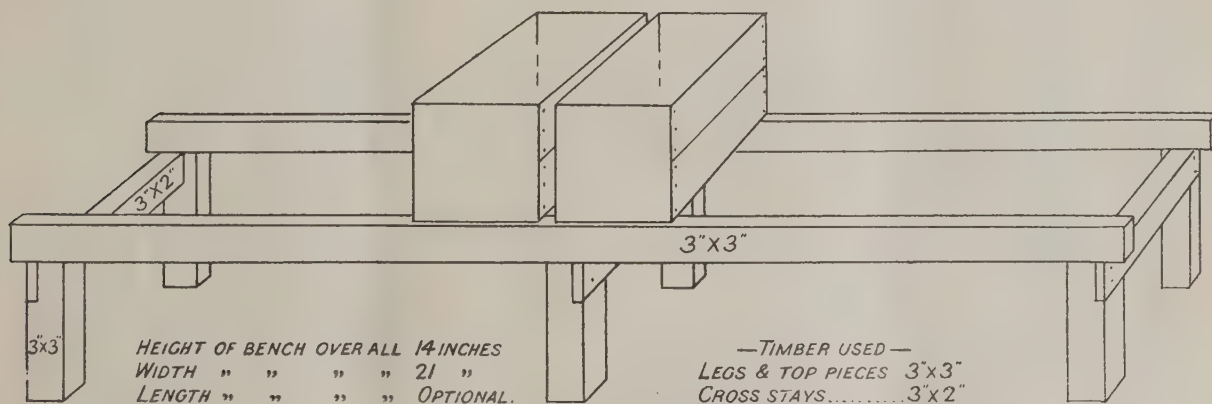


Fig. 9.—A home-made nailing-down bench suitable for the Half Dump Case.

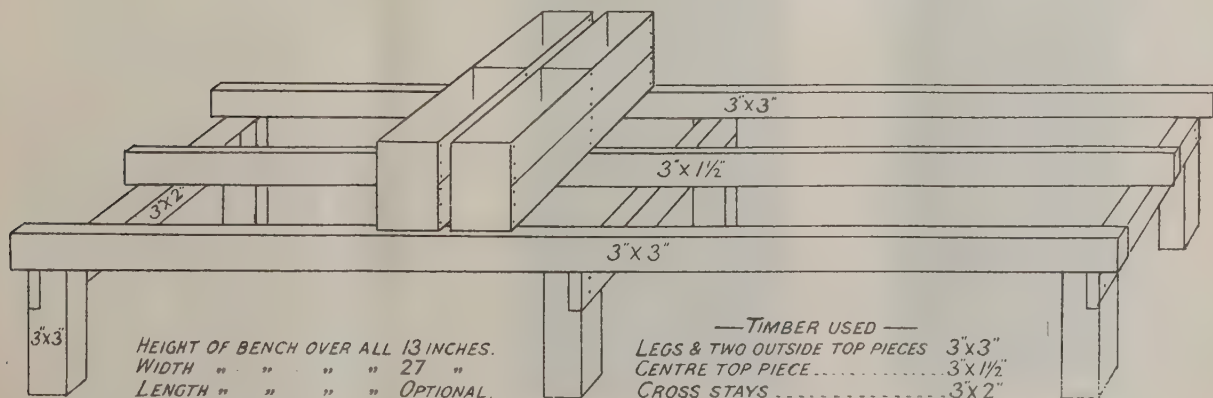


Fig. 10.—A home-made nailing-down bench suitable for the Half Long Bushel Case.

Agent's Name and Address.
SPECIAL.
30 dozen.

Grower's Name and Address
or Registered Brand.

Figure 8 illustrates a suggested method of branding or stencilling.

THE PACKING CHARTS.

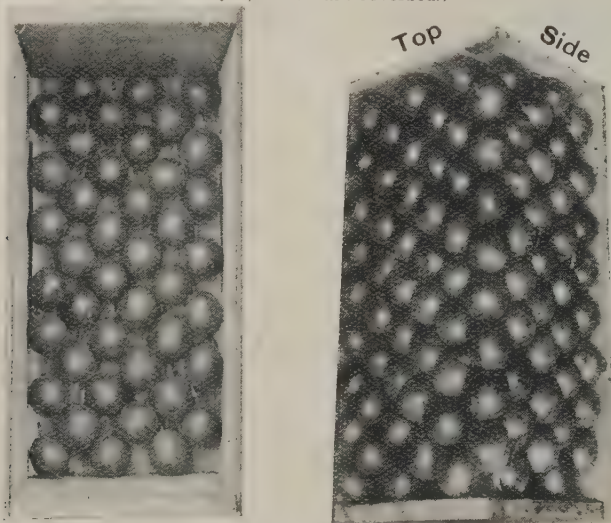
Long Bushel Case (26 x 6 x 14½ in.).			
Pack.	Layer.	Layers.	Total.
3-2	5 x 5	12	600 or 50 doz.
2-2	7 x 6	10	520 „ 43 doz. and 4
2-2	6 x 6	10	480 „ 40 doz.
2-2	6 x 5	10	440 „ 36 doz. and 8
2-2	5 x 5	10	400 „ 33 doz. and 4
2-2	5 x 4	10	360 „ 30 doz.
2-2	4 x 4	10	320 „ 26 doz. and 8
2-1	6 x 6	8	288 „ 24 doz. (stalks to centre, otherwise low)
2-1	6 x 5	8	264 „ 22 doz. (stalks to centre, otherwise low)

Half Long Bushel Case (26 x 6 x 7½ in.).			
Pack.	Layer.	Layers.	Total.
3-2	5 x 5	6	300 or 25 doz.
2-2	7 x 6	5	260 „ 21 doz. and 8
2-2	6 x 6	5	240 „ 20 doz.
2-2	6 x 5	5	220 „ 18 doz. and 4
2-2	5 x 5	5	200 „ 16 doz. and 8
2-2	5 x 4	5	180 „ 15 doz.
2-2	4 x 4	5	160 „ 13 doz. and 4
2-1	6 x 6	4	144 „ 12 doz. (stalks to centre, otherwise low)
2-1	6 x 5	4	132 „ 11 doz. (stalks to centre, otherwise low)

Half Dump Bushel Case (18 x 8-2/3 x 7½ in.).			
Pack.	Layer.	Layers.	Total.
3-3	9 x 8	5	255 or 21 doz. and 3
3-3	8 x 8	5	240 „ 20 doz.
3-3	8 x 7	5	225 „ 18 doz. and 9
3-3	7 x 7	5	210 „ 17 doz. and 6
3-3	7 x 6	5	195 „ 16 doz. and 3
3-3	6 x 6	5	180 „ 15 doz.
3-3	6 x 5	5	165 „ 13 doz. and 9
3-2	7 x 7	4	140 „ 11 doz. and 8

PACKING THE HALF DUMP CASE.

(All stems face in the same direction except those of last fruits in each layer, which are reversed.)



The 255, or 21 dozen and 3, count.

3-3 pack, 9 x 8 layer, 5 layers in the case. Total, 255, or 21 dozen and 3.

Finished case, 21 dozen and 3 count, showing the top and side view.

LONDON'S MARKET IMPROVEMENT.

Improvements for the better in fruit marketing in London are referred to in an illustrated leaflet to hand from Mr. H. G. Colombie, of Temple Court, Melbourne, representative of some of the leading fruit brokers in England and the Continent. The improvement referred to is the establishment of a new fruit exchange at Spitalfields, consequent of the removal from Pudding-lane. Some of the advantages quoted are as follows:—The lessening of traffic congestion; lower cost of handling imported fruit; additional impetus to the trade in Empire fruit; a speeding up of fruit transport between the docks and retailers; closer co-operation between the fruit brokers in London and Liverpool. The new fruit exchange in Spitalfields is stated to be the largest auction room in the world.

Mr. Colombie has also sent information, pointing out the special facilities he is offering for the British and European distribution of the coming season's exports.

PORT OF MANCHESTER.

Capt. W. J. Wade, representative, Manchester Ship Canal Company, 8 Bridge-street, Sydney, is directing attention to the importance of Manchester as a port of destination for Australian fruit and produce. In his advertisement in this issue, details are given of the vast quantities of produce shipped direct to the Manchester docks to serve the surrounding population of 12 millions. Capt. Wade would be glad to supply enquirers with all particulars re Manchester markets, also the forwarding rates to interior towns.

MANCHESTER MARKETS.

Profits Over £20,000.

The report of the Manchester Markets Committee for the year ended March 31, 1929, shows that the receipts were the highest in three years, amounting to £146,915/14/8. The payments totalled £127,277/1/11; of the profits, £20,500 went in aid of the city rate.

Professor Woggle: You have now been, I understand, twenty years in my service, James?

James (eagerly): Yes, sir.

Professor: Well, as a reward for your faithful service I have decided to name after you my newest species of bugs.

New South Wales.

News and Notes.

FRUITGROWERS AT ORANGE recently passed a resolution requesting full support for railway transit as against the encroachment of lorries. No men have more to thank the railways for than the men from Orange. They have their own co-operative siding, and loading platforms, and work in so well with the authorities that complaints are practically non-existent. In a few weeks time the same Department will be selling Orange Cherries on every platform in Sydney and suburbs, which will further demonstrate how closely their respective interests are allied.

The Hawkesbury district is now busy growing Tomatoes for three factories which have been recently prepared to receive the crop. One of these is to be run on co-operative lines, and will be historic, as it is the first of its kind this district has ever created. No body of growers will receive more genuine good wishes than will the men of this grand old area, as success means a revival of co-operative interest which is very much needed. It is said that old blood grows stagnant, but we who know these men believe that they can force their way through to a more progressive standard. The growers of N.S.W. will watch—and pray—that every success will attend this venture.

Amongst many other good things done by the Fruitgrowers' Federation was the embargo on concentrated Tomato puree from Italy. This has given a wonderful filip to a very profitable orchard side-line, and literally thousands of acres are being planted for factory purposes. Contracts are being signed at £8 per ton, a very satisfactory price if the crop is good. Two new districts, both far from Sydney, are making extensive plantings. These are Lake Cargellico and Nambucca, and both are well suited in every respect. Other areas which produce fruit not entirely suitable for pulping purposes, are dropping out, so there is no possibility of over supply. Processors state that they will take all consignments which are up to standard, as their stocks are now exhausted.

Considerable amusement and amazement has been caused by the wholesale issue of summonses

against orchardists who have not yet paid their registration fee. With a sense of humor not always sensed by the public, the Department of Agriculture has selected as the quarry all the prominent men who have defaulted. These men, of course, can only plead sheer neglectfulness, but they will have to pay costs just the same. Fortunately, there is no apparent opposition to the payment of this fee, as it is increasingly being recognised as money well spent. We are told that the delinquents, by parting up with 18/- costs, might keep their cases out of court, and it is whispered that not one hesitated.

The Coming Crops.

Crops of every description will be heavy in N.S.W. this year. All districts anticipate not only quantity, but quality. Stone fruits, commencing with Cherries, the earliest of which are now on the market, will be particularly heavy in supply. From the Apple and Pear areas, without exception, the crops will be probably a record. Grapes, in spite of adverse weather, last season are showing well, and the new cane coming along much better than was expected.

Much of the second-crop citrus—an enormous setting of which followed the breaking of the drought last Christmas—has fallen, and the trees have bloomed very profusely for the main crop. It is plain that the whole season will be one of plenty, and growers will be well advised to regulate supplies as much as possible.

The Irrigation Area.—Growers have now combined for the first time, although several first-rate co-operative concerns have functioned separately for years. These have now jointly negotiated with Sydney canners for the disposal of Apricots and Peaches on a very large scale. An agreement has been reached to supply 3,500 tons of canning fruit annually for five years, and the prices to be received are considered most satisfactory. Of greater general interest is the fact that the area growers will naturally be drawn closer together, with results which must be satisfactory to both themselves and the industry. A very large proportion of the fruit to be thus disposed of would otherwise have appeared on the Sydney and Melbourne markets. For this relief, much thanks!

Citrus growers in this State are making a very determined effort to prohibit the importation of Oranges and Lemons from the U.S.A. Much concern is felt regarding numerous scales and flies known to that country, but unknown here, and considering that all our present troubles of this nature have been brought in from overseas, there is sound reason behind the endeavor.

The fact that we cannot send our surplus-fruits to the U.S.A. arouses the feeling amongst growers that they are being imposed upon and this is accentuated by the knowledge that American vessels arrive here laden with sufficient fruit to complete the voyage to their home ports. All the large citrus producing areas are worrying their Parliamentary representatives, and when the new Ministry takes office, a barrage of protest will be launched.

The authorities state that every precaution is taken to ensure that no diseases or pests will be introduced, and that the quantities which arrive are too small to be a menace to local industry. The growers rightly argue that the quantity is so small as not to be worth the appalling risks involved, and that one lax inspection might cost many growers their livelihood.

The Fruit Marketing Committee of N.S.W. met on Friday, October 18, Mr. A. A. Watson, Director of Marketing, being in the chair. There was no representation by the Fruit-growers' Federation or the Agents' Association, apologies stating that the hour and date was not convenient. Amongst those present were Mr. J. N. Breden, Comptroller of Assets, Sydney Municipal Council, and Miss Portia Geach, President of the Progressive Housewives' Association. Very little business was transacted of a general nature, but it was disclosed that there was no intention at present to reduce the number of licensed barrows in the city. The committee is considering a scheme of reorganisation, and this will be presented in due course.

NEW COOL STORES FOR N.S.W.

CO-OPERATIVE EFFORT is very steadily making headway in N.S.W., the most important being genuine progress in the erection of cool stores. It is a notable fact that the comparatively newer districts show much more initiative than those which have been settled for many years.

The great district of Orange, famous for Cherries in particular, has now a store ready for the coming

crop. Young, another Cherry centre, will erect one with a commencing capacity of 10,000 cases. Kentucky, already running a co-operative packing house for pome fruits, is preparing another to serve the great increase in local production, and Yenda and Griffith, on the Irrigation Area, have plans well in hand for their individual efforts.

It is hard to estimate the great value of these stores to the industry as a whole. So much of the 1928 crop was sacrificed through lack of holding conveniences that it is evident the lesson was taken to heart by the most important centres of production. It now remains for the growers of the once-famous Bathurst district to get together and do likewise. These men generally use the Sydney Municipal cool-stores, but this prohibits due attention to the systematic release of supplies for the market—one of the most important considerations.

N.S.W. FRUITGROWERS' FEDERATION.

In a report issued by the Secretary of the Fruitgrowers' Federation of N.S.W. (Col. E. E. Herrod), the following are some of the matters dealt with.

Fruit Fly.—Failure on the part of growers to observe the regulations of the Department is mainly responsible for the spread of the fruit fly. A further effort is to be made to secure the co-operation of growers.

It has been arranged for a competent entomologist to be stationed permanently at the Bathurst Experiment Farm to conduct investigations regarding codlin moth, fruit fly, and other pests.

Fire Blight.—The Department is strongly opposed to the lifting of the embargo against the importation of some fruit from countries where fire blight is known to exist.

Codlin Moth.—Mr. Allman is to be stationed permanently at the Bathurst Farm to deal with this and other problems of interest to fruitgrowers.

Parasites.—The Department of Agriculture states that it is hoped to establish an insectarium on the Murrumbidgee Irrigation Areas in the near future. Growers will be supplied with parasites when they are available for distribution, together with full particulars regarding the method of setting out and protection.

Sprays.—On the Department having purchased samples of various sprays which are on the market from

time to time, they have found them all to be above the required standard.

Dusting.—Experiments to test the effectiveness of dust in the control of various fungus and insect diseases are being carried out by the Department.

Fertilisers.—Manurial experiments are being conducted by the Department in various districts, and further trials are contemplated during the coming season. It is hoped to have experimental areas established at 35 centres by the end of the present year. These experiments are carried out on private holdings, and are additional to those which are conducted at the experimental orchards.

A fruit tree census is being taken by officers of the Agricultural Department. A fruit products laboratory is under consideration.

Paper Mulch is Useful.

THE use of paper mulch for growing crops has come largely into vogue in Hawaii, U.S.A., and other parts of the world. The idea commenced in Hawaii, when an asphalt-coated paper was found invaluable for growing sugar cane and Pineapples. By the use of this paper mulch, weeds were kept down, soil moisture is conserved, and the crops grew more vigorously.

It was then tried with vegetables, fruit and flowers, and the results have been eminently satisfactory. Paper mulch helps to increase the number of plants produced per acre, and makes them harder; maturity is advanced to a substantial degree, and there is no necessity for cultivation. Of great importance is the fact that more plants can be produced to the acre.

Some of the results noted by Dr. Flint, of the U.S.A. Department of Agriculture, are that the increase per unit area was found to be related to the proportion of surface covered, there being a maximum increase following the complete coverage by the mulching paper.

In all particulars, the increases obtained appeared to be normal, with no tendency towards excessive vegetative vigor.

In all crops, the use of paper mulch eliminated the need for inter-row weeding and all cultivation. There was an increase of germination in certain crops, and the yield per acre was greater. The crop was superior in quality, cleanliness and size, and there was a marked hastening of maturity.

South Australia

Agricultural Bureau Conference.

AT the 40th annual conference of the Agricultural Bureau of South Australia held on September 16, 17 and 18, there was a large attendance of delegates from all parts of the State. The conference was opened by His Excellency the Governor, the Hon. Sir Hore-Ruthven, V.C.

The Hon. J. Cowan, M.L.C., Minister for Agriculture, addressed the conference giving a review of the agricultural developments in the State. The Chairman said the Advisory Board of Agriculture had conferred life-membership upon the following:—Hon. G. R. Laffer, Prof. A. J. Perkins, and Mr. W. S. Kelly; also the following members of branches:—Watervale: J. Scovell and F. N. Hamp; Balaklava: J. Spillane and R. S. Goldner; Gumeracha: B. Cornish and J. B. Randell; Kelly: W. A. Wornum; Lenswood and Forest Range: J. Green; Gladstone: A. B. Blesing; Smoky Bay: E. Lovelock; Wirrabara: A. R. Woodlands, E. J. and W. H. Stevens, P. J. Curnow and J. Hallett; Roberts and Verran: W. H. Whittaker; Beetaloo Valley: A. Bartrum; Gawler River: J. H. Dawkins; Narridy: E. Smart; Belalie North: A. H. Warren and W. Cummings; Georgetown: M. J. McAuley, G. Hill, W. Freebairn, and R. J. McDonald; Eurelia: W. T. Brown; Millicent: J. J. Mullins; and Mount Pleasant: V. R. Tapscott.

Papers were read on various topics concerning agriculture. Mr. Geo. Quinn, Chief Horticultural Instructor, gave an appreciated address on the "Cultivation of Citrus Fruits in South Australia."

Quality Grading.—The Lightning Fruit Grader Company, 5 Hoddle-street, Collingwood, N.9, desire to point out that in their advertisement on page 415 of the October "Fruit World," the wording "Two and three grading" should have read "Two and three quality grading."

The Lightning Grader Co. is busily installing graders in packing houses and orchards throughout Australia, New Zealand, as well as other parts of the world.

New Fruit Pressure Tester.

Valuable Device for Determining the Correct Picking Time of Pears

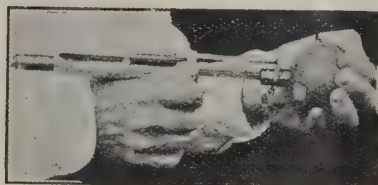
For a number of years, the different experiment stations of the U.S. Pacific Coast, as well as the United States Department of Agriculture, have been conducting experiments relating to the proper maturity for harvesting and shipping and storing of fruit. In studying the various maturity changes, both physical and chemical, softening of the flesh, offers one of the most satisfactory means of determining the proper time for picking.

The practice of determining the condition of the fruit by means of pressing it with the thumb is an old one. It remained, however, for O. M. Morris, of the Washington Agricultural

The firmness of Bartlett Pears varies from as high as 30 pounds on the tree, to 2 or 3 pounds when in prime eating condition.

As a result of the experimental work to date definite pressures have been correlated with dessert and shipping quality of a number of varieties of Pears, Apples, and Plums. Using a 5/16 inch rounded plunger point on a peeled surface, Bartlett Pears in California usually develop their best dessert quality when allowed to soften to about 20 pounds before harvesting.

During the past two seasons, the experimental work in California has



New California Fruit Tester for determining the firmness of Apples and Pears—the peeling device for removing the skin of the fruit, and the pistol-grip handle are the special features of this instrument.

Experiment Station, to conceive of the idea of measuring this softness or firmness of the flesh by mechanical means. From his simple equipment, consisting of a spring scale, a block of paraffin, and a marble, several mechanical devices or pressure testers have been developed. The latest of these is that designed by F. W. Allen, of the California Agricultural Experiment Station.

This instrument, as illustrated, is made of steel and aluminum and contains a high grade piano wire spring, carefully tested for accuracy. It operates on the same principle as previously designed instruments, but differs from them in being of smaller size, of lighter weight, and the general ease with which it can be operated. The peeling device for removing the skin of the fruit to be tested and the pistol-grip handle are added features, making the instrument especially convenient to use.

In operating, the skin of the fruit is removed from the points to be tested by a downward stroke of the instrument, and pressure is then applied to the plunger point until it penetrates the flesh to a set depth. The spring scale records in pounds the force required.

been so extensive that 23 pounds has been legally adopted as the maximum pressure at which early shipments of Bartlett Pears may be harvested for eastern shipment.

In previous year, some shipments have been picked rather too early and the fruit has failed to ripen properly.

Now that a definite maturity test and a restriction included in the State Standardisation law, fruit inspectors will have a definite means of determining just when the fruit is properly developed.—“Better Fruit.”

PAPER MULCH.

Fruitgrowers are appreciating the value of paper mulch in orchards, citrus groves and for the growing of vegetables and flowers. The success in growing various fruits and vegetables in Hawaii and U.S.A. with paper mulching is most marked. Paper mulching conserves soil moisture and prevents weeds. Messrs. James McEwan & Co., 119 Elizabeth-street, Melbourne, have the tested Pabco Thermo-gen mulch, sold in rolls three feet wide by 300 feet long, 22/6. Literature and all details are obtainable from this firm.

U.S.A. FRUITGROWERS.

New Co-operative Movement.

TO further develop the primary industries in U.S.A., the Fruit and Vegetable Growers' Co-operative Associations in 25 States have incorporated in Delaware an organisation known as the United Growers of America, with a capital of 50,000,000 dol. (nearly £10,030,000). as the first step in a movement for the co-operative marketing of crops worth 2,000,000,000 dol. (about £401,000,000) a year. The object of the organisation is to reduce wastefulness in distribution, and thus secure higher prices for farmers and at the same time lower prices for consumers. It is expected that the large capital it has at its disposal will enable it to set up extensive machinery for maturing and cooling the fruit before shipment, and will so make possible a systematic flow of produce to the market.

United Growers has the approval of the Secretary of Agriculture and the new Federal Farm Board. The chairman of the board of the corporation is Mr. Julius H. Barnes, formerly President of the United States Food Administration Board. Among other directors are Mr. William M. Jardine, Secretary of Agriculture in the Coolidge Cabinet, and Mr. Gray Silver, who organised the farm bloc in Congress.

Sixty co-operative associations form the nucleus of the new organisation, but membership is to be offered to other co-operative associations all over the country. Many are showing interest in the enterprise.

RELIEF FOR AGRICULTURE IN U.S.A.

Under the new Farm Relief Act, £100,000,000 is being allocated for agricultural relief in the U.S.A., the object being to stabilise prices by enabling the farmers to raise money on their crops during times of surplus.

EAT MORE RAISINS.

A young mother was having difficulty in persuading her four-year-old son to go to sleep, so on this occasion she promised him a handful of Raisins of which he was especially fond.

The child smilingly subsided, and after a few minutes the nap appeared to have been begun, when he raised his head and asked, “Your handful or mine?”

N.S.W. CENTRAL CITRUS ASSOCIATION.

THE usual tri-monthly meeting of the Central Citrus Association Board was held on October 10.

Crop Estimates.—From members' statements, there still appears to be a fair quantity of fruit to come through packing house channels, upwards of 90,000 bushels still being available. A large proportion of this will be second crop fruit of all varieties, mainly from the coastal districts. Members report that there is every indication of a good crop next season, as trees in all districts are in splendid heart and are showing a fair bloom.

Grading Regulations.—Further consideration was given to the need for altering the existing grading regulations in New South Wales, these regulations being also those adopted by Victoria and South Australia. The difference of opinion between New South Wales and the other States' Associations regarding the area of tolerance of disfigurement on the standard grade was once more considered, and it was decided to request the other States to agree to the disfigurement of this grade being contained in a circle not exceeding 1½ in. in diameter.

It was also held that the section of the regulations relating to dry and immature fruit needed altering, as at present there is no tolerance allowed. One dry or immature fruit in a case involves a breach in the regulations, and it was decided to endeavor to secure an alteration of both the Federal and State regulations to permit a tolerance of 5 per cent.

New Zealand.—The manager reported that little fruit had been sent by packing houses this season, owing to the high prices offering on the local market and to the competition in New Zealand with cheap American and Island fruit. This position applied to navels and commons only, and it is thought that considerable use will be made of the New Zealand market this Valencia season, as American and Island Oranges are likely to fall off in supply.

An interesting report was also received and considered showing the extent to which the Brisbane market had been retained for packing house fruit. A principle had been adopted whereby the total requirements of the Brisbane market were filled by one packing house, the price being fixed at slightly above Sydney parity, but not sufficiently so to warrant any speculative shipments being made by

N.S.W. growers or others who might buy on the Sydney market. As a result of this, the Brisbane market for southern fruit had been stabilised for a period of 12 weeks with a fluctuation not exceeding 2/- over the whole period.

Orchard Competition.—The Secretary of the Royal Agricultural Society stated at the recent Gosford Show that a prize would be given for the best five acres of citrus orchard in the State, and the Board decided that the following recommendations be made to the Royal Agricultural Society:—

1. A local committee be appointed in each district to organise the competition in their district and to judge same.
2. That the orchards selected by these committees should then be judged by a committee appointed by the Royal Agricultural Society.
3. The points upon which judging should be made to be as follows:—

General layout (taking into consideration evenness of plantings, absence of scattered varieties, limit of varieties to three), 10 points; tree appearance, 10 points; pruning, 10 points; freedom from disease, 10 points; quality of fruit, 30 points; commercial value of crop, 30 points.

General Notes.

The Valencia season opened at the beginning of this month, but only limited supplies have so far come forward. Indications are that there will be a distinct under-supply of this variety, but unless this is marketed by the end of November it will clash with the large second crop of Oranges expected to mature at that time.

Orange Drinks.—The demand for these is steadily on the increase, particularly in proprietary brands put up in squashes and carbonated waters. One large house reports an increase of 300 per cent. in the demand for the preceding corresponding period. Due to the high price of Common Oranges in the winter, and the reports of a second crop, manufacturers generally crushed lightly, and are now finding that they will need to come into the market on a large scale in the summer, if they are to retain their trade. Present indications are that there is not a sufficient supply of juice in Sydney to supply orders after Christmas.

Victorian Navels.—For the first time for some years, New South Wales experienced an invasion of Navels from South Australia and

Victoria. Large quantities arrived from Bamawn and Ferricoota, and New South Wales growers had the interesting experience of seeing Victorian fruit sold by the N.S.W. Railway Department, who had absorbed all the fruit this State had to offer. The prices of Navel Oranges this year are the highest for a long time. During this month good counts of best quality touched 24/-. Mandarins were sold up to 28/-, and even Common Oranges realised up to 16/-.

Prune Sales.

Undoubtedly the introduction of Prunes to the travelling public through the Railway Department, has demonstrated that this is now a staple article, and is likely to be in as regular demand by the public as chocolates, cigarettes, etc. At the inception it was expected that 1,000 one-pound cartons could be sold on the railway stations throughout the State daily, and at the beginning of August sales began at this rate. Within one week they were doubled, and before the end of the month they were doubled again. Since then it has been difficult to supply the requirements, and, whilst the demand is still somewhat under-supplied, nearly 6,000 cartons is the daily average. The total to date of cartons sold by the railway refreshment rooms is approaching 300,000. This has proved a very welcome relief to the Prune growers, as it has disposed of practically the whole of the remaining crops of the growers on the Murrumbidgee Irrigation Areas, without in any way interfering with the usual commercial channels, in fact, it has increased the demand by the general public by calling attention to the desirability of this class of fruit.

The Prunes, which have been distributed, have been of the Robe de Sargent and D'Agen varieties, specially processed in such a manner as to present, for immediate consumption without cooking, a sweetmeat which more than holds its own with the Date as an article of diet. Should the distribution of these Prunes proceed at the rate which now appears to be definitely established as a steady one throughout the year, considerably over 500 tons of Prunes will be absorbed, in which case the anticipated surplus production for New South Wales bids fair to be taken care of.

Young.—Peach aphid is doing damage to the developing Peach crops here. Growers are spraying with black-leaf 40 and soap.

FRUIT CROPS IN N.S.W.

Mr. C. G. Savage, Director of Fruit Culture, Sydney, writes under date October 15, stating it is yet too early to forecast the fruit crops in N.S.W., as many of the varieties had not then finished blossoming.

The crop report for September issued by the Department of Agriculture stated as follows:—

Stone Fruits.—The various varieties of the different kinds of stone fruit trees have blossomed most profusely in all the chief districts where these fruits are grown.

Pome Fruits.—The blossom on all the early blossoming varieties of Apples has been heavy, and indications point to a profuse blossoming of all late blossoming varieties.

Practically all varieties of Pears have blossomed well.

Citrus Fruits.—The marketing of navel and common types of Oranges has practically been completed. Main crop Valencias are still being marketed. Choice consignments are commanding highly satisfactory prices for the grower.

Lemons are still being forwarded, and commanding prices which should prove remunerative for growers.

Batlow.

Crop prospects in this district are as under:—

Apples.—Very heavy blossoming of all varieties. Main varieties grown:—Granny Smith, Jonathan, London Pippin, King David, Democrat, Stayman, Delicious, Winesap, Yates.

A heavy crop is anticipated—in excess of 1928.

Pears.—Medium to heavy blossoming. Main varieties grown:—Winter Coles, Packham's Triumph, Josephines, Williams. We anticipate a good crop about normal compared with 1928 or 1929.

Cherries.—Not many grown. Heavy blossoming and appear to be setting well. Main varieties:—St. Margaret, Florence, Noble.

H. V. SMITH.

Batlow, 18/10/29.

Batlow Show.—The annual show of the Batlow Agricultural Society will be held on March 25 and 26 next. An interesting schedule is being prepared. The Secretary is Mr. C. S. Gregory, Batlow, N.S.W.

Murrumbidgee Irrigation Area Prospects.

It is early to make any definite pronouncement, but reports indicate

that there is every prospect of a good season. Peaches have been attacked by aphids to some extent, but the damage has been much less than usual. Apricots have blossomed heavily, whilst Prunes and Grapes show every sign of setting a maximum crop.

J. G. MUMFORD

(Established 1906)

Fruit & Vegetable Salesman

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Reference—Satisfied Growers in all States

RIDLEY & HOULDING

Covent Garden Market
LONDON

Specialists in Australian Fruit.

Solicit consignments of Apples, Pears, Etc.

Our record of over 30 years' standing in the handling of Australian fruit, with satisfactory results, is a recommendation for growers to ship their fruit to our house.

Representatives—

International Fruit & Mercantile
Company Ltd., Melb., Vic., Australia.

Murdoch Bros., and A. J. Walshe &
Co., Hobart, Tasmania.

SOUTH AUSTRALIA.**Renmark Show.**

In the citrus section of the Renmark Spring Show, which opened on September 12, there was good competition and high quality exhibits.

The judge (Mr. L. W. Lilley) spoke of the high quality of the citrus fruits, and said that the reputation of Renmark's citrus fruits was worthily upheld. The following are the prize-winners:—J. W. Clark, E. R. Strachan, Hockney Bros., E. Vorwerk, H. Howell, M. B. Geneste, C. R. Rose, J. H. Schofield, C. R. Ritchie, A. Wilkinson, W. B. Carr.

**South Australian
Fruit Marketing Association****Export Matters Discussed.**

THE monthly meeting of the Executive Committee of the South Australian Fruit Marketing Association was held on October 7. There was a large attendance of delegates, who were asked to attend to consider the report of the growers' sub-committee.

Canadian Standard Case.

The recommendations of this committee, which were approved, were that the Canadian standard case should be used, and plain white paper was recommended in preference to either wood-wool or corrugated cardboard.

The paper to be

white sulphite wrapping paper,

weighing not less than 7 lb. per ream, size 10 inches by 10 inches, cases to be wired, two wires placed near the ends of the boxes, labels to be placed on the end of the case, and to be about 3 in. each way less than the dimension of the case end. The words in the labels, which would also contain "urgent with care" to be incorporated with South Australia, the grower's or exporter's name, the words "standard," "plain," or "special," denoting the quality, and either the count, or size in inches of the fruit packed; the variety of Apples also to be shown.

To ensure that cases are stacked and carried on the side, it is suggested that the words "this side up" be stencilled on the case. On the opposite end of the case to that having the label, the consignee's name and port of destination would be shown.

A considerable difference of opinion was expressed in regard to the relative merits of the "cheek" and "flat" pack, and it was decided to invite Mr. G. Quinn, the Chief Horticultural Inspector, and Mr. Fowler, to attend and demonstrate the packing methods.

Inspection of Fruit.

As the Commonwealth Government inspection at Port Adelaide was deemed insufficient, it was decided to ask the State Government to appoint additional inspectors to examine Apples and Pears whilst being packed in local districts for export.

It was decided to obtain crop estimates, and to hold the next meeting on November 4.

Murrumbidgee Irrigation Areas.

Conference of Agricultural Officers.

Superphosphates—Gypsum—Vacuum Fumigation—Pollination of Apples—Reduction of Peach Growing.

THE Fifteenth Conference of Agricultural Officers was held at Leeton on August 13, the following being in attendance:—

Messrs. J. Ward (chairman), J. G. Youll (for part of meeting only), G. G. St. C. Potts, H. J. Braund, T. C. G. Cole, H. J. Dargin, G. W. Beverley, H. Mallaby, S. Braithwaite, C. R. Glover, W. Poggendorf, J. Thompson, H. G. Lawson, F. H. Barrett, T. N. Powell, F. McKirdy, C. Braithwaite, E. S. West, B. H. Martin, H. N. England, R. Wood, E. B. Furby, H. Lackie, P. C. Hely, H. G. Williams and P. J. Stackpool (Secretary).

Among the matters discussed were the following:—

Superphosphates Effect on the Soil.

Mr. Potts stated that the opinion has been expressed that the continual application of superphosphate has a bad effect upon the texture of the soil; he could not subscribe to that opinion. Superphosphate is a commercial phosphate manufactured from mineral phosphates with the addition of sulphuric acid, and the result is that approximately 50 per cent. is calcium sulphate and up to 22 per cent. mono-calcium phosphate and dicalcic phosphate and impurities. If every cwt. of superphosphate has $\frac{1}{2}$ cwt. of gypsum he thought the continual applications will have the effect of improving the soil. In the case in question the settler was using 3 cwt. per acre per annum and the advice given was that in addition he should use 2 tons of gypsum per acre. He could not see why we should advise settlers that superphosphate has a bad effect upon the soil. On the other hand, he thought it improved it. Mr. Lackie stated it was his opinion that was expressed, the application in the case he had in mind being 6 cwt. of superphosphate. He could not agree with Mr. Potts; heavy applications over a period of years would make the soil harsh; 3 cwt. of superphosphate per acre per annum was not so excessive, and he thought 6 cwt. should be reduced and advised reduction in quantity of super. to 2 cwt. and the addition of nitrogen. The crops were very poor. Mr. West agreed with Mr. Potts, and thought most experiments go to show that re-action of the soil is little affected after a long time. There is a possibility that with the use of abnormal

amounts the plants growing at the time will be affected, but those abnormal amounts are not often used. Mr. England said that if the superphosphate did have an acid effect it would be an advantage to the condition of our soil. Mr. Beverley stated that the question came up some years ago, and he wrote on the subject to Mr. Ramsey, Chemist of the Department of Agriculture, Sydney, and received a letter practically on the lines laid down by Mr. Potts. Mr. Lackie knew of one instance where they have laid down 5 cwt. of super. and $\frac{1}{2}$ ton of gypsum; that is the fertiliser they are using; gypsum is applied to improve the texture of the soil and the super. as a fertiliser.

After further discussion, it was moved by Mr. Potts, seconded by Mr. Beverley, and carried, that this conference confirm the opinion expressed by Mr. Potts.

Vacuum Fumigation.

Mr. Braithwaite stated this was a system that seemed to have possibilities for the areas; some of our nursery fumigation may be done in this way, and he thought it possible the time might come when we could have our cases returned to the areas after being fumigated at the Sydney end. On one occasion recently when Mr. Barrett went to Melbourne he asked him to inspect a vacuum fumigation plant installed there. Mr. Barrett stated he had inspected the plant, which is situated at Ingles-street, Port Melbourne, the registered office being 422 Collins-street, Melbourne. The plant consists of three steel cylinders with a capacity of approximately 11½ tons each; the door is closed and the air is pumped out so as to give a pressure of equal to 28 inch vacuum. The gas is then pumped into the cylinders—a non-inflammable, non-corrosive and non-explosive gas; the fumigation people would not, of course, tell him what the gas was. This gas is agitated by means of an electric fan to give uniformity of distribution. The treatment is from four hours upwards. The gas is then pumped out and the cylinder washed out with fresh air. This process not only kills the pest, but also destroys the egg, thus eradicating the possibility of re-infestation. Everything is treated—furniture, timber, pianos and any

cereal is treated in this manner without injury. A big advantage is there is no loss through opening or breaking packages, as it is quite unnecessary to handle the contents in any way. This obviates waste in repacking and loss of time.

It was moved by Mr. Braund, seconded by Mr. Cole, and carried, that the Council for Scientific and Industrial Research be asked if they have looked into this system and for any advice they can give as to the merits of the system, more especially with a view to the treatment of dried fruits and other farm products.

Interpollination of Apples.

The Secretary read a report (7/3/29) by Mr. T. C. G. Cole, Acting Field Officer, in which he stated that under local conditions there is no doubt the Apple "Delicious" is the most suitable for the purpose of cross fertilisation, especially so as regards "Granny Smith." A report (22/5/29) by Mr. C. Braithwaite, Acting Land Settlement Inspector, was read, stating there is no definite data available to prove that there is affinity between "Delicious" and "Granny Smith," and consequently it is not known whether the former will cross fertilise the latter; he is experimenting with the two varieties and it will be about two years before definite data will be available. In the meantime it would be a safeguard for settlers to interplant Granny Smith and Delicious with either Yates, Jonathan, or King David. Mr. Beverley pointed out that Mr. Cole and Mr. Braithwaite disagreed; he himself disagreed with Mr. Braithwaite. Seven years ago at Mount Barker, in West Australia, it was proved that Delicious cross fertilises Granny Smith. Mr. Potts said that Mr. Arthur, late orchardist at the Yanco Experiment Farm, stated that Delicious was a satisfactory pollinator for Granny Smith. Mr. S. Braithwaite pointed out that at the last Planting Committee meeting, Mr. Savage stated he did not consider Delicious a good variety for planting up here as it did not color up and recommended that it be not advocated and that they should stick to Jonathan. Mr. Powell would advocate Cleopatra.

After discussion it was moved by Mr. C. Braithwaite, seconded by Mr. Cole, and carried, that it be a recommendation that where planters of Apples are using Delicious for interplanting, that a second variety, such as King David, Cleopatra, Commerce, or Yates, be used.—"Murrumbidgee Irrigator."

Prune Bud Variations Have Varietal and Trade Significance

(By A. D. Shamel, Plant Physiologist, U.S.A. Department of Agriculture.)

MOST of the Prunes grown in the United States are produced in the Pacific Coast States. In California the D'Agen, commonly known as the French or Petit, is the variety most widely cultivated, while the Imperial Epineuse, Sugar, and Sergeant varieties are also grown to a lesser extent. In Oregon and Washington, the Italian Prune is the most important cultivated variety.

In a study carried on during the last 15 years by the writer and his associates, with individual D'Agen Prune trees and their fruits in some of the Banning and Santa Clara Valley Prune orchards of California, bud variations were found to be rather frequent. These are believed to be highly significant, especially when considered from the standpoint of maintaining both quantity and quality of the crops of the trees of this variety. The variations found in trees of the D'Agen variety are similar in many respects, and may be considered as typical of those which have been observed in trees of the other commercial Prune varieties.

The bud variations found and studied in this way may be classified as entire trees, limbs, and individual fruit variations. The entire tree variations are those in which the tree and its fruits as a whole differ in one or more marked characteristics from the normal for the variety. It is apparent that many, if not all, such variations arise from the unintentional propagation of buds from a limb or other entire tree bud variation in commercial nursery practice. The limb variations are those where one or more limbs in an otherwise normal tree vary in one or more characters from the normal limbs of the same trees. The individual fruit variations include those where a single fruit on a branch varies in some one or more clearly definable characteristics from the normal ones on the same branch.

Characters Perpetuated by Budding.

The experimental progeny propagations of the entire tree, and the limb bud variations indicate that the characteristics of the parent trees or limbs have been generally

perpetuated through budding. The individual fruit variations resemble closely the fruit characteristics of the limb and entire tree variations for the most part.

The Prune bud variations studied may be further classified as to the quantity and the commercial quality of the fruit which they produce. In some instances trees and limbs in otherwise normal trees bear few, if any fruits. This condition is very rare, but many trees have been found which characteristically bear light crops, while in other instances much larger quantities of fruit than the normal are produced over a period of years.

In other cases entire tree and limb variations have been found which bear fruits maturing two or three weeks earlier than the normal, while in other instances trees and limbs have been found which produce fruits ripening from two to four weeks later than the normal.

Some of the trees and bud variations in D'Agen Prune trees bear fruits which are more acid, while others produce characteristically sweeter fruits than the normal.

Large-fruited, as well as abnormally small-fruited, tree and limb variations have been found which have proved to be inherent ones through systematic progeny tests. Inasmuch as the commercial value of the crop of a given variety is dependent to a large degree upon the size of the fruits, these variations are of great importance to the industry, from the fact that they indicate the possibility of isolating strains in those varieties in which the trees tend to produce a large proportion of their crops of the most valuable commercial sizes.

Bud variations provide the basis for the isolation of superior strains by the systematic selection and propagation of the most desirable ones.

A. D. Shamel, in U.S.A. "Agricultural Year Book."

AFTER THE ELECTIONS.

Smith: Do you think the candidate put enough fire into his speech?

Smythe: Oh, yes. The trouble was, he didn't put enough of his speech in the fire.

PPLES FOR EXPORT.

Suggestions from London.

Grading—Packing—Spray Residue—Shipping.

IN a memorandum received by the Minister of Agriculture, Mr. Pennington, from the Victorian Trade Commissioner in London, several suggestions are made concerning the shipment of Victorian Apples for the coming season.

It is pointed out that the Canadian case, wire bound, with cleats top and bottom, is best, as there is less bruised fruit with this case, and it makes a better pack. When shipped these cases are placed on their sides, and with cleats top and bottom further ventilation is obtained. When the usual 2 in. dunnage is used between every layer of cases, there is then a certain amount of air space all round the cases.

It is suggested, also, that endeavors should be made to secure

a separate chamber

for the Victorian Apples, so that the hold need not be opened again until port of discharge, thereby securing their arrival in a fresh and bright condition. In years past, large quantities of our fruit have arrived in London dull and unattractive in appearance through the hold in which the fruit was stowed being opened at Fremantle and hot fruit placed on top of the Melbourne fruit.

In regard to the

spraying of fruit,

it is pointed out that arsenic spray is still being used by some growers, and there were several complaints this year of Apples showing arsenic. It is most important, if this spray is used, that any spray marks on the fruit are removed before packing, as the health inspectors in London have strict orders to watch for arsenic spray, and in the report of the Royal Commission on Arsenical Poisoning, it was recommended that penalties should be imposed where the proportion of arsenic was found to exceed 1/100ths of a grain per pound or 1/100ths of a grain per gallon.

Growers should not ship immature fruit at the start of the season. It is far better to wait for a few weeks than send immature fruit, as buyers buying one lot and finding the Apples sour, will return to buying American Apples until our shipments are more mature.

Only firm, clean fruit should be packed for shipment, and this should be properly graded, otherwise many cases arrive in slack condition, and are sold as "slacks."

Advertising Oranges in Brisbane.

AN interesting publicity effort to increase the sale of Oranges was recently made in Brisbane.

The Oranges were of the "Excello" brand, put up by the Griffith Producers' Co-operative Company, Griffith, N.S.W., and the publicity work was done by Mr. Hedley Geeves, growers' agent, Brisbane. Messrs. Allan &

Stark Ltd., merchants, Queen-street, Brisbane, courteously provided their shop window for the publicity effort, which lasted a week.

A summary of the programme was as follows:—

There was a big display of cases of "Excello" Oranges in one section of the shop window.

Packing demonstrations were given throughout each day by Miss Jennie Rae, of Griffith—a rapid and first-class packer.

In another section of the window was a pictorial sketch of the Murrumbidgee irrigation areas (see photo. on this page).

A competition was conducted with £6/6/- as prizes for the best bottled specimens of "Excello" Oranges (not jelly or marmalade).

At the official opening, attended by



Display of Excello Oranges in Brisbane Shop Window.

**Do not run any Financial Risk with your Fruit
but Consign it to**

Telegraphic Address:
"Apples, Brisbane."

H. V. GEEVES

Registered Shipping No. 6.

FRUIT EXCHANGE

BRISBANE

SELECTED AGENT FOR:

Victoria: Harcourt Fruitgrowers' Progress Assn. Ltd.
Harcourt Fruit Supply Co. Ltd.
Victorian Central Citrus Assn. Ltd.

Tasmania: State Fruit Advisory Board.
New South Wales: N.S.W. Central Citrus Assn. Ltd.
Batlow Packing House Co-op. Soc. Ltd.

over 200 people, the Mayor of Brisbane, Alderman W. Jolly, C.M.G., spoke of the need for co-operation and the value of good quality fruit well graded and packed.

Throughout the week large crowds watched Miss Rae at work. No less than 600 cases were carted in and out of Allan & Stark's store. There were 250 cases of Oranges used in the display stacks, besides a quantity of fruit which was sold. The fruit stood up well during the demonstration.

Certain opposition was displayed by some Queensland citrus growers, who thought it was a mistake to push N.S.W. Oranges in Brisbane. The answer was forthcoming that Queensland finds a ready market for her fruits in New South Wales and other Australian markets. Further, it was stated that the Commonwealth citrus position demanded general advertising to teach people the necessity for eating more citrus fruits.

All who witnessed the packing demonstrations were agreed that Miss Rae gave a remarkable exhibition of speed and dexterity.

In a letter on this subject, Mr. Hedley Geeves writes:—

"Of course the value of the display is the boosting of the co-operative idea and the impressing upon the public the fact that co-operation in the fruit trade means a standardised pack and grade, and consequently reliability both to the buyer and the consumer. The 'Excello' brand of fruit is becoming daily more definitely established as a favorite line within the trade, and with the consumers, and after all, this is the real desire behind such publicity efforts."

Mildura Citrus.—The need for a district brand for Mildura citrus is now well recognised. Nearly 300 suggested trade names were received by the District Council of the Victorian Central Citrus Association.

A district packing shed is desired, and with the whole-hearted co-operation of the growers, it is believed that outside capital should not be needed.

"Flexo-glass" is a chemically prepared fabric of value to fruit and vegetable growers, poultry-keepers, etc. Its values have been proved for plant propagating houses and frames, poultry houses, and for a variety of special purposes. It admits light, including the healthful ultra-violet rays. It is impervious to weather, cannot be torn, and is cheaper than glass. Full details are obtainable from Clark, King & Co. Pty. Ltd., 30 Guildford-lane, Melbourne.

Citrus Growers' Conference.

Proposed Reorganisation of the V.C.C.A.

A CONFERENCE of district branches of the Victorian Central Citrus Association was held at Melbourne on October 22. Delegates attended from various parts of the State. There were also visitors from New South Wales and South Australia.

The meeting was primarily called to consider the plans for reorganisation submitted by the Murrabit Association. These proposals included the dividing of Victoria and the border into convenient districts, each district to have one director. This would make eight directors, and for the purpose of illustrations, the following grouping was suggested:—

- (1) Wangaratta, Cobram, Ngawe.
- (2) Shepparton, Kyabram.
- (3) Echuca, Perricoota, Tongala.
- (4) Bamawm, Rochester, Elmore, Nanneella.
- (5) Murrabit, Myall, Koondrook, Barham.
- (6) Long Lake, Kangaroo Lake, Tresco, Lake Boga.
- (7) Swan Hill, Nyah.
- (8) Mildura, Red Cliffs, Merbein, Curlwaa.

By means of this enlarged directorate it was contended growers would be kept more closely in touch with the doings of the V.C.C.A. While recognising the value of the work done by the V.C.C.A. it was submitted that insufficient attention was now being paid to district organisation, that the 'control of the market was more nominal than real, and membership was declining.

There was a diversity of opinion regarding the new proposals, but it was generally recognised that the Murrabit delegation were very earnest in their endeavor to improve the industry. It was decided to refer the matter to the next annual conference, in the meantime copies of the proposed reorganisation scheme to be sent to all the districts.

It was stated that the directors would make an appointment for the position of general manager at an early date.

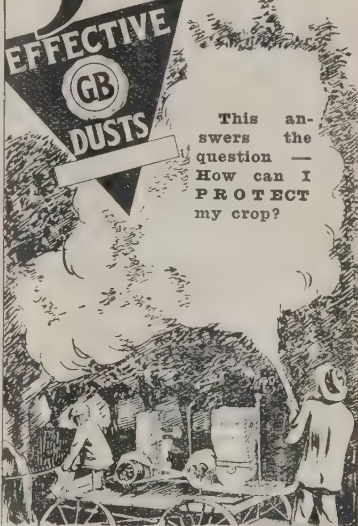
English Fruit Trade.—Messrs. White & Sons Ltd., fruit brokers, of London, Hull, Liverpool, Manchester, etc., announce that their London office has been removed from White House, Monument, to the London Fruit Exchange, Spitalfields, E.1, London.

DUSTING

5 times quicker
than a Liquid Spray

EFFECTIVE
GB
DUSTS

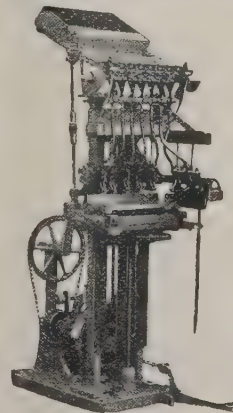
This answers the question —
How can I PROTECT my crop?



GIBBS, BRIGHT & CO.,
Adelaide.

BOX MAKING

MILLERS' BRITISH-MADE
NAILING MACHINES.



SOLE AGENTS,

GIBBS, BRIGHT & Co.
27 Grenfell Street, ADELAIDE

MILDURA CITRUS SHOW.

Mildura is to be congratulated on having organised a Citrus Show in conjunction with the Spring Show of the Horticultural, Poultry and Floricultural Societies. Mr. S. A. Cock, Government Citriculturist, said the fruit was of excellent quality, and commended the Societies on reviving the show.

A district competition among the Mildura and Curlwaa branches of the V.C.C.A. was held. This was won by Mildura; Merbein (2), Red Cliffs (3). There were individual prizes for navels, Late Valencias, Mediterranean Sweets, Seville Oranges, Grape Fruit, Mandarins, Lemons. Prize-winners included:—Irymple Packing Co., Mildura Co-op. (Merbein branch), W. H. Hiscox, R. K. Rodwell, J. B. Watmuff, A. R. Smart, E. F. Page, Old Mildura, W. M. Newton, Wormwell Bros., Mrs. L. M. Hollik, V. L. B. Roberts, S. P. Taylor, and Curlwaa Co-op.

NEW SOUTH WALES.

Curlwaa Co-operative Packing Co.

The fourth annual meeting of shareholders of the Curlwaa Co-operative Packing Society was held on September 30. There was a good attendance, Mr. S. P. Taylor presiding.

It was stated by Mr. L. R. Strother, in presenting the balance-sheet, that there was a loss on the profit and loss account of £33, but the appropriation account showed a credit balance of £91/17/9.

Since May to September 30, over 17,000 cases of citrus had been packed; 5,000 cases of Valencias, 1,000 cases of navels, as well as a few hundred cases of Grape-fruit have yet to be packed; 11/9 a case was paid out for the Thompson navel pool and 8/6½ for the Mandarin pool.

Messrs. H. F. Midgley, R. McKenzie, E. McCleary, and M. Strother were re-elected to the board of directors, and Mr. W. B. Crang, of Wentworth, was re-elected auditor.

There was a long discussion as to the advisability of having two navel pools. The Chairman advised that as this question was a vital one, it be placed on the agenda paper for the next half-year meeting. A notice of motion to this effect was carried.

School Inspector: "Are there any questions?"

Willie Jones: "Yes, sir. How do you calculate the horse power in a donkey engine?"

The Sulphuring of Apricots

Recommendations of Committee Convened by the Council for Scientific and Industrial Research.

EARLIER IN THE YEAR a Committee consisting of Messrs. Geo. Quinn, Chief Horticultural Officer, South Australia; C. G. Savage, Director of Fruit Culture, New South Wales; A. V. Lyon, Officer in Charge, Research Station, Merbein; and W. R. Jewell, Research Chemist, Department of Agriculture, Victoria, was convened by the Council for Scientific and Industrial Research to consider the question of sulphuring of dried fruits.

While the Committee considered that existing information was insufficient on which to base absolutely conclusive recommendations regarding procedure for the coming season in connection with all kinds of dried fruits, it was satisfied that there was quite sufficient data available to enable recommendations to be made, which, in the case of Apricots, might reasonably be expected to give a satisfactory product in most instances. The sulphuring of Pears and Peaches, in the opinion of the Committee, did not offer any serious difficulties.

The Committee's recommendation in regard to Apricots are reprinted below, and Mr. Savage, Director of Fruit Culture in N.S.W., and a member of the Committee, is confident that if growers follow out these recommendations they will experience little difficulty in keeping the sulphur content below 14 grains per pound.

The Recommendations.

(a) **Maturity.**—It is essential that all fruit be picked "eating ripe" and that, when cutting, all firm or over-ripe fruit should be put to one side and either discarded or sulphured separately, so that all the fruit in one chamber may be of uniform maturity, and, therefore, yield a uniformly sulphured product. It is recognised that firm fruit absorbs sulphur less readily than ripe.

(b) **Type of Chamber.**—It is recommended that an air-tight chamber be used; the covering of which should be of some light material, e.g., "malthoid." In the case of movable hoods, every precaution should be taken to prevent ingress of air at the base of the hood, as, for example, by using compacted moist earth around the bottom.

A number of small air-tight chambers are recommended in preference to one large one, so that fruit shall not be held for any length of time after cutting and before sulphuring.

For example, when using 6 feet x 3 feet trays the size of the chamber should be sufficient to accommodate a stack of about fifteen trays, with a clearance of about 6 inches between the trays and the sides and top of the chamber. Trays should be staggered 6 inches when stacking.

Two controllable vent holes, 1 inch diameter and about 1 foot apart, should be provided in the roof of the chamber close to the wall farthest from the sulphur fire when one fire is used, or in the centre of the roof where a fire is used at each end of the chamber.

A movable vent-glass is a desirable adjunct in order to view the conditions inside the chamber and to test the condition of samples of the fruit.

(c) **Quantity of Sulphur.**—Seven to eight pounds of sulphur per ton of fresh cut fruit should prove ample, and it is essential that the sulphur be dry in order to burn readily. The sulphur pit should preferably be located just outside at one, or both, ends of the chamber, with a free entrance into the chamber, and adequate provision for closing the air inlet after the vents are blocked. Use a minimum amount of inflammable material to light the sulphur, and when fumes are issuing freely from the vents close the latter with tightly-fitting corks.

The weight of fruit in a charge should be calculated by weighing the quantity of pitted fruit on two or three trays, thus obtaining the average per tray and the total weight per charge. Calculate the amount of sulphur necessary, weigh this, and measure the volume in a container. Thereafter it would be sufficiently accurate to measure the same volume of sulphur each time a similar number of trays are sulphured.

(d) **State of Fruit.**—It is desirable to sulphur as quickly as possible after cutting, preferably within two hours. (Hence the desirability, under (b), of a number of small chambers.)

Fruit should be stacked from the bottom upwards in the order in which it is cut. Freshly-cut fruit absorbs sulphur dioxide more readily than that cut some time prior to sulphuring, and this arrangement of stacking allows the driest fruit to be in contact with the maximum density of warm sulphur fumes, thus tending to uniform sulphuring results.

(e) **Period of Exposure.**—Under average summer day temperatures

four to six hours' exposure to the sulphur fumes is considered sufficient to preserve the color without over-sulphuring. The practice of leaving the fruit in the sulphur chamber overnight is not advocated, as it frequently results in over-sulphuring. If it is found essential to sulphur overnight the vent holes should be opened at the end of three hours.

Correctly sulphured fruit is usually characterised by a firm core, an easily detachable skin, with some exudation of juice into the cup, and a general evenness of color of the cut surface. The fruit is usually over-sulphured if the whole of the flesh has become softened, and if the cups have overflowed with juice.—"Agricultural Gazette of N.S.W."

TOP GRAFTING FRUIT TREES.

Danger from Fungus Infection.

THE fungus disease, Polystictus, is on the increase in Victoria. This disease shows up especially in Apple trees which have been top grafted.

Infected trees die right back, and have to be grubbed out. After the tree is top grafted the disease may show up the following year, or on the other hand, it may not become apparent for four or five years. The fact remains, however, that if the fungus once gains an entry, the death of the tree is certain, unless prompt measures are taken.

When the disease is first noticed on a top grafted tree, and the affected limb is totally removed and the wound is sterilised, it may be possible to save the tree.

Mr. P. Val Kerr, Tyabb, Vic., states that on 40 trees top grafted, five years ago, this method has been followed, and, although he cannot claim that the trees are free from Polystictus, they are not showing any ill effects to date.

Mr. Kerr points out that the Polystictus is fairly prevalent in Tasmania as revealed by the article on top grafting in the August issue of the "Fruit World." Until a few years ago the disease was practically unknown in Victoria, or at least, unknown on the Mornington Peninsula. Its introduction, and spread, might well form the basis of scientific research. It is a serious problem. Polystictus is a native disease, and is known to plant pathologists from its presence on native flora. Until recently, however, it had not been troublesome to fruit trees. Now the position is changed, and the Polystictus is a serious menace to fruit trees, so much so that growers are requesting that this receive the attention of the Science Branch of the Department of Agriculture.

The fact is that growers are afraid to do grafting work, as the loss of the tree seems almost inevitable.

The trouble seems mainly to appear on trees which have been top grafted, but there is evidence that trees other than top worked, are affected to a

less degree. The actual operation of inserting the graft seems to have some bearing on the resultant attack by Polystictus.

Mr. Kerr states that his method in changing varieties is now to cut down a limb in the centre of the tree and bud into the ensuing growth, gradually removing the other limbs over a series of years. Each cut so made is sterilised with a solution

T. STOTT & SONS

Fruit Merchants

Established 1882

A Trial Consignment solicited from Growers in all States.

Prompt Settlement.

11 WESTERN MARKET,
Melbourne

SUPPORT CO-OPERATION

By Consigning your
FRUIT to the

Producers' Distributing Society Ltd.

(Late Coastal Farmers' Co-operative
Society Ltd.)

Agents for

"BLACK LEAF 40"

and all Orchard Requirements

Melbourne Sydney
Newcastle Hobart
Launceston Devonport

(f) Characteristics of Sulphured Fruit.—The filling of the cups with juice is not necessarily a reliable indication of satisfactory sulphuring, as fruit in this condition may frequently be over-sulphured.

Cooksley & Co.

(W. P. COOKSLEY)

Reliable Fruit Agents

Over 30 Years Experience

TRY THEM!

Fruit Exchange, Brisbane
QUEENSLAND

Shipping No. 29

Reference: Commercial Banking
Co. of Sydney Ltd.

Ship Your Oranges, Lemons, Grapes to New Zealand



All consignments for
this market will have
careful attention and
realize highest prices
if sent to

The Co-operative
Fruitgrowers of Otago
Limited, Dunedin

Personal supervision of
every consignment.

Cheques posted promptly.

Drop us a Line or Cable
"Peachbloom," Dunedin.

of 1 lb. bluestone to 1 gallon water, and as soon as it is dried, the wound is painted with a lead paint.

Growers on the Mornington Peninsula are convinced that this subject needs close investigation. The editor would like to hear from growers in other districts regarding their experiences in this connection.

Fruit Canning.

SHEPPARTON CANNERY. Government Advance Repaid.

THE Premier of Victoria, Sir Wm. McPherson, has expressed pleasure in the fact that the Shepparton Co-operative Cannery has repaid to the Government the outstanding advance of £47,000, and released the Treasury from its guarantee to the bank in respect of their trading account, which amounted to about £250,000.

He congratulated the company on the manner in which it had succeeded. Much of the success was due to the managing-director, Mr. A. W. Fairley. The works were capably managed. That there was complete confidence in the further success of the company was seen in the fact that in the Shepparton district the people had taken up an additional 29,000 shares. It was estimated that the output of the works this year would be 800,000 doz. tins of canned fruit.

It is because of these factors that the process people welcome the possibilities for direct purchases. It is no advantage for them to rely upon market operations, because any of one hundred reasons may upset all their efficiency and business calculations.

The advance of co-operative marketing amongst fruitgrowers marks wonderful opportunities for supplies direct to the large buying concerns, and adds, incidentally an advantage to every commercial grower. These societies are able to treat with manufacturers and canners, and are able to fulfil the most exacting require-

HAMBURG (GERMANY).

**Ph. Astheimer
And Sohn,
Fruit Brokers . .
and Auctioneers
(GERMANY)
Established 1863.**

Largest receivers of Australian,
Tasmanian, and American
APPLES.

Foreign Apples a Speciality.

NEW SOUTH WALES.

Large Contracts for Canning Fruits.

GROWERS have not yet fully realised the importance of keeping from the markets all fruits of factory type. In past times—well before such huge supplies of fruits were permitted to crowd agents' stands—it was generally believed that the jam operators would clean up inferior types, and that a price of some kind or other would be realised, no matter how blemished the fruit might be.

The stern truth, however, is, that factories never did and never will require rubbish. With the advances in modern processing machinery, coupled with exacting methods of business efficiency, other vital factors have come into being.

Fruits to be processed must firstly be of approved types. Competition now dictates varieties, and there is no demand for any others. Then arises the question of condition. Fruit must be exactly at the point of suitability. Finally, there must, for the sake of economic working, be continuity of supply to a time-table more exacting than any dealing with less perishable products. Machinery has a limit to working capacity, and this must be kept moving.

H. WILSON

Wholesale Fruit Merchant and
Commission Agent,

56 and 58 WESTERN MARKET,
WILLIAM ST., MELBOURNE.

Branch at Victoria Market.

Late Partner in firm of
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Orders for Apples carefully
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Tel. add. "ERCOT," Hobart.

Consignment shipments solicited
on behalf of leading Fruit
Brokers and Salesmen through-
out England and Continent.

CANNED FRUITS—SEASON'S EXPORTS.

The exports of canned fruits to various destinations from the commencement of the season to September 30, 1929, were as follows:—

Destination.	Apricots. Doz. 30 oz.	Peaches. Doz. 30 oz.	Pears. Doz. 30 oz.	Totals. Doz. 30 oz.
United Kingdom	170,045	311,510	150,945	632,500
New Zealand	25,216	64,304	1,604	91,124
The East	1,355	2,678	2,353	6,386
Canada	9,548	93,677	7,929	111,154
Miscellaneous	1,082	1,735	1,751	4,568
	207,246	473,904	164,582	845,732

ments. Countless thousands of bushels of fruit and Tomatoes are now being dealt with, and it is sincerely hoped that as time goes on the markets will be further relieved.

Growers on the Murrumbidgee Irrigation Area have recently contracted to supply Sydney canners with 3,500 tons of Apricots and Peaches annually for five years. It is expected that economy in handling, due to regularity of supply, will cause a great extension, and that although

prices to growers will hold, reductions in working costs will enable the consumption to be stimulated.

KYABRAM PRESERVING COMPANY.

THE Victorian Government has decided to guarantee £40,000 for the Kyabram Co-operative Preserving Company on the security of portion of the coming season's crop. This does not involve an addition to the existing trading guarantees on

Fruit Shipments
United Kingdom
and the Continent

W. D. PEACOCK
& CO.

24 Southwark St., London Bridge,
LONDON, S.E. 1.

AND HOBART, TASMANIA
Solicit Consignments

The High Standing and Long Experience of this Firm is a Guarantee that the Best Interests of Consignors will be conserved.

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Leading Australian Firm of
Fresh Fruit Exporters.

Manufacturers IXL Jam and
Canned Fruits.

Hop Factors—Largest Cool
Stores for Hop Storage in
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All Orchard Supplies available
at all times.

Agents for—

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Apple Manufacturers, London
Assurance Corporation, Federal
Steam Navigation Co. Ltd.,
Scottish Shire Line of Steamers,
Osaka Shosen Kaisha.

Correspondence Invited.

H. JONES & CO. LTD.,
HOBART

behalf of the company, which amount to £205,000.

The Premier, Sir Wm. McPherson, in making the foregoing statement in the Victorian Parliament, continued:

"I am informed that the cost of producing canned fruits at all the co-operative canneries is now greatly reduced, and is reaching a stable and payable basis, and it is believed that Kyabram, which might be looked upon as the weakest financially, will next year show a reasonable profit."

Queensland.

THE COASTAL DISTRICTS.

YOUNG suckers of Bananas should be making vigorous growth now. The stools must not be allowed to be over-crowded with too many suckers. The land should be well worked and kept free from all weeds. If there is any likelihood of the soil washing badly with heavy rain, rows of Mauritius, velvet, or other suitable Beans, should be planted at right angles to the fall of the land. The Beans should be manured to get a greater yield.

A mixture of 1 cwt. of sulphate of potash and 4 cwt. of basic superphosphate or finely-ground phosphatic rock to the acre, and if the soil is deficient in lime, a dressing of not less than half a ton to the acre will be found very beneficial.

Pineapple plantations should be kept in a state of thorough tilth, and no weeds allowed to grow. Care should be taken that all blady grass be stamped out, as it soon takes control once it becomes established, and the plantation is ruined.

Pineapples and Bananas can be continued to be planted through the month. Young Papaw plants and Passion Fruit raised from seed can now be set out.

The ground of citrus orchards should be kept in a state of thorough tilth. A careful watch should be kept for young scale insects, and if these are noted they should be sprayed with a weak emulsion of miscible oil consisting of one part of oil in forty parts of emulsion.

If the trees are suffering from lack of moisture, no oil sprays should be used. If the scale insects are very bad, a weak lime-sulphur spray, or a soap and tobacco or weak resin wash will be effective.

In order to kill the mites, which are the direct cause of the darkening of the skin of the fruit known as "Maori," use sodium or potassium sulphide washes. A sharp look-out should be kept for borers, which should be immediately destroyed.

Vineyards should be kept thoroughly cultivated, and if necessary, spraying should be continued for downy mildew and black spot, also sulphuring to prevent oidium.

Care should be taken that all fruit infested with fruit fly is gathered and destroyed.

An arsenate of lead spray should be used for killing leaf-eating insects, and a combined spray consisting of Bordeaux or Burgundy mixture and arsenate of lead should be used on Potatoes and Tomatoes.

The Granite Belt, Southern and Central Tablelands.

Orchards and vineyards should be kept thoroughly cultivated. Citrus trees should be irrigated where necessary, and the land kept in a state of perfect tilth. Pip fruits must be banded at the beginning of the month, also spraying for codlin moth should be continued. The bandages should be examined frequently and all larvae in them destroyed.

MARGETSON
& CO. LTD.

Fruit Importers & Salesmen

30 James St. and James
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COVENT GARDEN
LONDON, W.C.

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Jamaica House,

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Shipping Nos.

431 and 432

If the fruit fly makes its appearance in the Cherry crop growers must endeavor to stamp it out, as the later ripening crops of Plums, Peaches, Apples, Pears, etc., will become infested.

The fruit fly is the most serious pest of the Granite Belt, and every effort should be made to check it.

The best remedy for the Rutherglen bug, another serious pest, is to keep the orchard clean and free from weeds.

At the first appearance of brown rot, all ripening fruit should be sprayed with the sodium sulphide wash. — "Queensland Agricultural Journal,"

**AUSTRALIAN
FRUIT GROWERS !—**

SHIP THROUGH ONE OF THESE

**TO ALL THE BRITISH AND
CONTINENTAL MARKETS**

**AND YOU WILL OBTAIN TOP
PRICES FOR YOUR FRUIT**

The map illustrates shipping routes from Australia to various markets. In Australia, agents are listed for Perth (Geo. Wills & Co Ltd), Adelaide (Silbert, Sharp & Bishop Ltd), Melbourne (J. F. & M. Co, S. E. Scott, A. G. Lester, N. Mc Lean Pty Ltd), and Hobart (Clements & Marshall Pty Ltd). In the British Isles, agents are listed for Belfast (Connelly, Shaw Ltd), Dublin (Connelly, Shaw Ltd), Glasgow (Russell, Turnbull & Co Ltd Est. 1872), Newcastle (Connelly, Shaw Ltd Est. 1875), Hull (MacGeorge & Jardine Est. 1877), Manchester (M. Isaacs & Sons Ltd Est. 1815), Cardiff (Connelly, Shaw Ltd), Bristol (Bristol Fruit Brokers Est. 1905), and Southampton. In Continental Europe, agents are listed for Copenhagen (Kobenhavns fruglauktioner), Amsterdam (Algemeene Vruchten Import Maatschappij), Rotterdam, Cologne, and Hamburg.

The linked organisation of Australian shippers and overseas brokers shown above combines expert knowledge, skill and experience, with a spirit of exceptional responsibility and service.

General Australasian
Representative:

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Grading of Bananas.

New Regulations in N.S.W.

Attention is directed to the new regulations under the Plant Diseases Act, 1924, published in the Government Gazette of September 6, 1929, relating to the grading of Bananas. The new regulations, numbers 38-41 are as follows:—

38. There shall be five grades of Cavendish Bananas, viz., "Special," "Choice," "Standard," "Plain," and "Inferior."

"Special" Cavendish Bananas shall be free from blemish, and shall be not less than nine inches in length and five inches in circumference.

"Choice" Cavendish Bananas shall be not less than eight inches in length and four and one-half inches in circumference.

"Standard" Cavendish Bananas shall be not less than six and one-half inches in length and four and one-quarter inches in circumference.

"Plain" Cavendish Bananas shall be not less than five and one-half inches in length and four inches in circumference.

"Inferior" Cavendish Bananas shall consist of Bananas which do not comply with any of the foregoing grades.

39. There shall be four grades of Ladies' Finger Bananas and Sugar Bananas, viz., "Special," "Standard," "Plain," and "Inferior."

"Special" Ladies' Finger and Sugar Bananas shall be free from blemish and shall be not less than seven inches in length and four and three-quarter inches in circumference.

"Standard" Ladies' Finger and Sugar Bananas shall be not less than six inches in length and four and one-half inches in circumference.

"Plain" Ladies' Finger and Sugar Bananas shall be not less than four and one-half inches in length and four inches in circumference.

"Inferior" Ladies' Finger and Sugar Bananas shall consist of Bananas which do not comply with any of the foregoing grades.

40. No person shall pack for sale of sell—

(i.) any Bananas in any package or covering which contains any foreign substance in any amount exceeding one per centum of the capacity of the package or covering;

(ii.) any Bananas which are not sound and free from fruit fly;

(iii.) any Bananas in any package

or covering on which is written or printed any misdescription of any of the fruit therein contained;

(iv.) any Bananas in any package or covering containing one-half bushel or over unless the package or covering is legibly marked on the exterior in letters not less than half an inch in height with the following particulars, viz.:

(a) the name and address of the registered trade mark of the person, firm or corporation by whom or by which the Bananas were packed;

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BRAND

SPRAYS

PARSONS & JAKUES
Manufacturing Chemists
6 Patterson Street
155 Yarra Street } **Abbotsford, Vic.**
Tasmanian Agents—
N. L. HOPKINS, HOBART

(b) the name of the variety;
(c) in the case of Cavendish, Ladies' Finger and Sugar Bananas, the grade thereof, and, if of "Inferior" grade, the length of the smallest fruit in the package;

(d) in the case of other varieties of Bananas, the length of the smallest fruit in the package or covering;

provided that, if the foregoing particulars are printed on a label securely pasted on the exterior of the package or covering, they may be in letters not less than one-quarter of an inch in height.

41. For the purpose of regulations 38, 39 and 40, the length of a Banana shall mean the length measured on the outside of the curve from the junction of the fruit at the stem end to the apex of the fruit, and the circumference shall mean the greatest circumference.

VENTILATED FRUIT CASES.

(To the Editor, "Fruit World.")

Sir,—Re the treatment of Apples for keeping and export. I have proved by experience that Apples that have not been allowed to get hot, will keep perfectly sound and good, free from brown heart, bitter pit, and scald, for six or eight months, though subject to the varying temperatures of season, night and day. This was effected by the fruit being picked into and stored in automatically self-isolating cases, i.e., the top, bottom and both sides exposed to the air in a quite open shed. This proves that the fruit creates sufficient carbon dioxide for its well-being, though immediately it escapes from the cases it can get freely away. The above Apples were Five-crown and Reinettes.

Cases that will do the above perfectly, are obtainable in Melbourne. They provide uniform and universal perpendicular and horizontal airways for each and every case, no matter how large the stack may be.

You are aware that the Government, in three successive years, made experimental shipments of Grapes. These were shipped in the cases described above, and were reported to be the best that had arrived in London from Australia.

The above shows that pre-cooling is eliminated, as the fruit is not allowed to get hot.

In my opinion irreparable damage is done by allowing the fruit to become over heated, and is confirmed by a very prominent representative from the Cambridge University.

I shall be glad to furnish any further information that may be desired.—Yours, etc.,

W. M. GREEN,

1 Horsley-street, Bentleigh, Vic.

BUSINESS IS BUSINESS.

An Irishman offered sixpence to the boy could tell him who was the greatest man in history.

"Christopher Columbus," answered one boy. "George Washington," answered another boy. "St. Patrick," shouted a bright little Jewish boy.

"The sixpence is yours," said the Irishman; "but why did you say St. Patrick?"

"Right down in my heart I knew it was Moses," said the Jewish boy, "but business is business."

AN IMPORTANT CONTRIBUTION TO THE SPRAY INDUSTRY

The New Spreader "FLUXIT"

[Instantly Soluble]

No Fruit Grower can afford to be without "FLUXIT" in his Spray

No spray is the most efficient scientific spray until the spray water is transformed into a colloidal solution. This is accomplished with "FLUXIT." It "Makes every spray a better spray," at the cost of a few pence per tank.

- "FLUXIT"— makes a perfect spray, wets thoroughly, spreads uniformly, and clings to the surface.
- "FLUXIT"— Makes the standard amounts of arsenate used in sprays, much more efficient to kill.
- "FLUXIT"— will give better results with one half pound than the one pound of obsolete spreaders did before, in arsenate sprays.
- "FLUXIT"— fluxes the spray material to the sprayed surface. It makes the spray go further.
- "FLUXIT"— makes any spray or combination of sprays safer to use.
- "FLUXIT"— gives Nicotine, Lime-sulphur, and Bordeaux sprays a thicker film. It wets better and stays longer. It makes the Nicotine Sulphate more efficient to kill.
- "FLUXIT"— when used with white (summer) oil and arsenate of lead, in combination, makes a much more effective spray than arsenate of lead alone.
- "FLUXIT"— is recommended for use with all white oils.
- "FLUXIT"— largely prevents russetting of fruit with Bordeaux sprays.
- "FLUXIT"— makes the spray wet as it hits—spread as it wets—and stay where its put.

"FLUXIT"

is a scientific product, prepared from strictly high quality materials, and packed while fresh and keeps in that condition until used. Chemical tests have shown that "FLUXIT" has not deteriorated after 3 years in its original containers.

There is no "FLUXIT" substitute for

"FLUXIT" is not a calcium caseinate. The latter was proved to be deficient three years ago. "FLUXIT" is the only spreader which makes improvement from year to year, and is the result of years of research to make spreader conform to what it should be. A material that will deposit twice the amount of lead and remove it easier than any other spreader or obsolete calcium caseinate. "FLUXIT" is prepared so as to cause every kind of standard spray material to become more efficient.

Manufactured by— **COLLOIDAL PRODUCTS CORPORATION, San Francisco, U.S.A.**

Australia Agents—

Lawford's Fruit Exchange Pty. Ltd.
DONCASTER, VICTORIA

Growers! Write for Full Information. Agents Wanted in all States where not represented.

Australian Dried Fruit.

Large Sales in United Kingdom.

THE Commonwealth Dried Fruit Board advises, on October 12, that there have been large realisations of dried fruit in Great Britain. During the past week, 549 tons Currants realised £40/8/2 per ton, 354 tons Sultanas £41/3/9 per ton, and 49 tons Lexias £35/7/2 per ton.

The following table shows exports to date and total sales recorded at the London Agency of the Board:—

	Shipments, Tons.	Sales, Tons.	Balance, Tons.	Average of Sales.
Sultanas	30,278	14,341	15,937	£43 3 0
Currants	11,800	9,144	2,656	44 1 8
Lexias	2,156	621	1,535	37 15 7
Totals	44,234	24,106	20,128	

It is now anticipated that approximately 6,500 tons will be shipped in addition to shipments already effected. As there is at present 20,128 tons in British ports, or afloat, the visible supply yet to be disposed of is therefore between 26,000 and 27,000 tons.

Sales in Britain to date realised £1,045,000. It is now estimated that the harvest will produce processed fruit to the extent of 71,500 tons. The importance of the British market is apparent from the foregoing precis. During the next few weeks the course of the Sultana market in London will be determined by quotations for Smyrna fruit, as, despite damage to the Turkish crop, considerable quantities will be available for

the London market, where otherwise supplies are comparatively light for other than Australian grades. Satisfaction is felt that balance of the Currants of Australian origin are small, as heavy Greek supplies are shortly expected in London.

The demand for Lexias is poor.

Western Australia.

THE ANNUAL CONFERENCE of the West Australian Fruit-growers' Association, is to be held in Perth in the last week of November.

This being centenary Year, possibly some Eastern growers may be in the West during the conference. They would be assured of a hearty welcome if they visit the conference whilst it is sitting.

Amongst the items on the agenda paper will probably be one regarding the future representation of this State at interstate fruit conferences. It is recognised that Western Australia should be represented at interstate conferences, but the Fruit-growers' Association is at a disadvantage in having to incur heavy travelling expenses for any delegates sent east.

A Bill for an Act to regulate the packing and sale of agricultural products (i.e., a Topping and Grading Act), sponsored by the Minister for Agriculture, has just passed through the Lower House. The necessity for

Soil Cultivation is Essential for Successful Fruit Culture



D. HARVEY

ORCHARD AND VINEYARD
IMPLEMENT SPECIALIST.
FRUIT GRADERS : DEHYDRATORS

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Quick-Acting NITROGEN

Cuts your Overhead Expenses

EVERY year the importance of nitrogen is stressed by agricultural experts, and every year progressive farmers and orchardists better realise, through practical experience, that nitrogenous fertilisers are profitable fertilisers. Mr. F. M. Read, M. Ag. Sc., Horticultural Research Officer to the Victorian Department of Agriculture, recommends for orchard application in the Spring, quick-acting nitrogenous fertilisers.

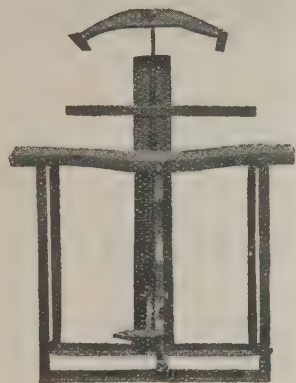
Sulphate of Ammonia

is the most economical source of nitrogen supply. Sulphate of Ammonia mixes well with superphosphate and potash to make a complete manure, and it makes an ideal top-dressing for independent seasonal applications. Ask your fertiliser agent for a bag for private trial on your own holding this season.

Literature from

THE AUSTRALIAN SULPHATE OF AMMONIA PROPAGANDA COMMITTEE
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"To Choose the Best is Wisdom"



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TWO PROMISES

The promise of a good Fruit Season

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ARE IN EVERY GROWER'S MIND JUST NOW

How can you get the greatest return from a season so promising?

There is only one way. Fit up your Packing House with up-to-date, reliable equipment, cut down your handling costs—and increase the quality of your pack.

We will be pleased to send you full information and catalogues showing Models suitable for every class of Grower and Packing House.

THE "LIGHTNING" FRUIT GRADER CO.

5 Hoddle Street Collingwood, N.9., Melbourne, Vic.

Cable and Telegraphic Address:—"LIGHTNING," Melbourne.

legislation in this respect was recognised by fruitgrowers who passed a resolution to this effect at the last conference held in Albany.

An Eastern Hills Districts Fruit-growers' Association has lately been formed and affiliated. The President is Mr. L. B. Howatson, the Vice-President, Mr. Thos. Cosgrave, and the Secretary, Mr. T. H. Ilbery, of Mundaring Park, Mundaring.

Sprays for Fruitgrowers.—"Nik-kof" has won considerable appreciation from orchardists and small fruit-growers. "Nik-kof" is stated to be very effective in eradicating insect pests. The preparation is sold in bottles and tins by Messrs. Clark, King & Co. Pty. Ltd., 30 Guildford-lane, Melbourne. This firm would be glad to send free booklets on application.

-LEMONS-

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C. M. BROOKE & SONS
73 Whiteman St., South Melbourne, Vic.

American Fruit Crops for 1929

IT is becoming increasingly evident that this will be a year of very light fruit production, according to official estimates published in the "American Fruitgrower Magazine"

Apples.—Dry weather is responsible for much of this reduction. The total crop is estimated at 149 million bushels; the commercial crop 30 million barrels as compared with 35 million barrels in 1928 (calculate three bushels to the barrel).

The two States which mostly compete with the fruit from Australia and New Zealand, are Oregon and Washington. Reports are as follows:—

Oregon (August 14).—Fruit crop conditions are at the present time as follow:—Apples, 6,093,000 bushels, estimated total production of which about 4,200,000 bushels are commercial. This compares with 4,800,000 bushels commercial crop in 1928. Size and quality of fruit excellent.

Washington (August 10).—Reports indicate a decided decrease over the last estimate. The Apple crop estimate shows about 28,350,000 bushels, as against 33,500,000 bushels in 1928.

THE PRODUCTION OF PEARS is forecast at 173,000 tons, including 150,000 tons Williams and 23,000 tons autumn and winter varieties. This includes all frost-marked fruit, which is considerable in some areas.

In 1928 the total production of Pears was estimated at 224,500 tons, of which 200,000 were Bartletts (Williams), 24,500 autumn and winter varieties. The 1928 crop was disposed of as follows:—61,500 tons canned, 132,000 tons used fresh, and 31,000 tons dried. The 1928 tonnage of dried Pears was considerably above the average.

The foregoing is extracted from the Californian crop report issued on August 12 by Mr. E. E. Kaufman, Agricultural Statistician, California Department of Agriculture.

PATENTS GEORGE A. U'REN PATENT ATTORNEY

"HENTY HOUSE," 499 LITTLE COLLINS ST.
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Codlin Moth

Every time you Spray
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Cooper's Arsinette

you give your crop
a safer cover than
is possible with
any other
Arsenate
of Lead.



It Wets Quickly

Covers Evenly

Adheres Tenaciously

and does not require

the addition of a Spreader.

Manufactured by the Proprietors
- of Cooper's Famous Sheep Dip.

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Cooper Engineering Co. Ltd., Melbourne.
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A. G. Webster & Sons Ltd., Hobart.

South Australia—
Elder Smith & Co. Ltd., Adelaide.
West Australia—
The Westralian Farmers Ltd., Perth.
Queensland—
Southern Queensland Fruitgrowers' Society, Ltd., Cleveland, Brisbane.

COOPER'S
The Best Arsenate of Lead Powder.
ARSINETTE



FIGHTING INSECT PESTS.**Woolly Aphis Parasite (Aphelinus Mali).**

These parasites are now available from the Department of Agriculture. The twigs with the parasites should be put out as soon as possible as the wasps are emerging.

It is proposed to carry out an experiment at the Burnley Gardens with this parasite against the Peach aphids. The experiments will be carried out at once by Mr. C. French, Jr., Government Biologist and Entomologist, and H. W. Davey, Senior Orchard Supervisor.

Pear and Cherry Slug.**Codlin Moth.**

See "The Fruit World," September 1, 1929, p. 350.

Scale Insects.

The young San Jose, red, black or olive scales, are now moving. Spray thoroughly with nicotine sulphate or Black-leaf 40, 1 oz. to 5 gallons of soapy water.

Painted Apple Moth.

Caterpillars of this moth are now becoming numerous in fruit orchards.

They are particularly destructive to the fruit spurs of the Apple tree. Spray with arsenate of lead.

Thrips.

Now the warm weather is here, thrips are making their appearance in the flowers of Apple and other fruit trees. Benzole emulsion, 1 lb. to 5 gallons of water, or nicotine sprays should be used. It is proposed by the Science Branch of the Department of Agriculture to carry out experiments this season with the light oils against thrips.

Orange Aphids.

The black aphids of the Orange and Lemon are more plentiful than usual at the present time. They usually attack the young shoots, causing same to shrivel. Spray with nicotine sulphate or Black-leaf 40.

Cherry Aphids.

The dark or black-colored Cherry aphid is now commencing to swarm on the young growths. They curl up the leaves which often turn yellow and die. In some orchards these insects have completely destroyed the

trees. Spray same as for Orange aphids.

Bryobia Mite and Red Spider (Mite).

Now that the hot weather is here these destructive mites are hatching and attacking the leaves of Apple and other fruit trees. When badly attacked, the leaves turn yellow and drop. Spray same as for Orange aphids. White oil sprays could also be used. Thoroughly spray underside of leaves.

Looper Caterpillars.

See "The Fruit World," October 1, 1929.

Pakenham.—Indications point to an Apple crop above the average, providing there are no seasonal disturbances, such as thrip infestation. Growers believe much good will follow the formation of the Victorian Fruit Marketing Association.

Geo. Lister Pty. Ltd.

Importers and Exporters.

19 Western Market, Melbourne.
Telegraphic Address: "Listeria,"
Melbourne.

'Phone: Cent. 4417.

Geo. Lister Pty. Ltd., representing some of the leading houses in the British and Continental fruit trade, desires to inform growers of Apples, that they are prepared to receive on consignment or will purchase Apples for the United Kingdom, Denmark, Sweden, Holland, Germany and Norway.

Further information may be obtained by communicating with—

GEO. LISTER PTY. LTD.



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TREES

Good Crops

of finest fruit, commanding highest market prices, are obtained from Goodman's quality Trees. All information, illustrated catalogue, etc., free.

GOODMAN'S NURSERIES

P.O. Box 47 BAIRNSDALE, VICTORIA
(W.-McF.)

Grubs and Eggs in Dried Fruit

are the terror of the fruitgrower, the grocer and the consumer. All dried fruits, nuts, etc., coming into Australia should be sterilised to kill all the grubs and eggs present. As all insect life and eggs

Can be Completely Eradicated

by the Hydro Vacuum process, Australian Dried Fruit could be so treated, and sent out in sealed containers to prevent re-infection. With such delightful, clean fruit, public confidence would be gained, resulting in mutual satisfaction and bigger trade. The old-time fumigating system has been rendered obsolete

By the Sterilizing Process

perfected in Victoria and patented through the Commonwealth. Strict tests under Government supervision prove that this process is absolutely satisfactory in the destruction of all insect life and eggs in dried fruits, nuts, grain, borers in timber, eelworm and bulbmite in bulbs. This effective system

Of the Hydro Vacuum Fumigation Co. Ltd.

is in operation at the Company's works, Ingles-street, Port Melbourne. The penetration of the lethal gases is complete, without opening cases or cartons. Further, the goods are in no way harmed. Full information is contained in a descriptive booklet obtainable free on request. This contains report of demonstration on September 4, before Federal and State Government officials.—Write for your copy now.
The Hydro Vacuum Fumigation Co. Ltd., officially registered as a Quarantine Station by the Plant Quarantine Department. Works: Ingles-street, Port Melbourne. Office: Temple Court, Collins Street, Melbourne, C.I. Phone: Central 2670.

Tasmania

ALL-AUSTRALIAN FRUIT SHOW.

Hobart, May, 1930.

The Australian Conference of Fruit-growers Will Also Meet Then.

PREPARATIONS are actively in hand for the All-Australian Fruit Show, to be held in Hobart in May next, the Secretary of which is Mr. A. J. Honey, 26 Elizabeth-street, Hobart, Tasmania.

A comprehensive schedule has been arranged, and an interesting programme is being provided, and it is hoped to have a large attendance of visitors from all parts of Australia and New Zealand.

In conjunction with the show there will be held a session of the Australian Conference of Fruitgrowers, at which Mr. W. Ranger, Brisbane, will preside. Many matters of vital importance to the fruit industry will be discussed at this conference, and a large attendance of fruitgrowers is anticipated. The Hon. Secretary, Mr. R. E. Boardman, of the "Fruit World," Box 1944, G.P.O., Melbourne.

T.O.P. CO. Tasmania.

THE annual meeting of shareholders of the Tasmanian Orchardists' and Producers' Co-operative Association Ltd., was held on September 12.

Mr. S. J. Kellaway, Chairman of Directors, in his annual report, pointed out that the short crop of 1929 reduced general business and exports, the f.o.b. sales were above normal, and prices were most satisfactory.

To avoid trouble in carrying space on ships, the Association has inaugurated a system of preferential bookings so that those growers who book early will be sure of priority space to those who book after November 30.

The retail sales were over £100,000. This does not include the f.o.b. sales of fruit, nor fruit sent on consignment.

Commenting on the coming season's export prospects, the manager of the Tasmanian Orchardists' and Producers' Co-operative Association Ltd., Mr. C. H. Cave, writes as follows, under date October 4:—

"From authentic cables received, there is no doubt that the American crop is lower than the official shortage of 11.2 per cent. for the whole of the crop, consisting 6 per cent. short on barrel States and 17 per cent. short on box States. The crop is now anticipated at 15 per cent. to 20 per cent. short, with a scarcity of early varieties, but a heavy crop of Winesaps, so that export to England will continue well into April."

"There is a wonderful bloom all through our orchards," writes Mr. J. P. Piggott, M.H.A., General Manager, Port Huon Fruitgrowers' Co-operative Association Ltd., on October 9, "but at the present time no one can exactly tell what the crop will be. It certainly looks as if it will be a very good one."

PORT HUON COOL STORES.

Extension to 110,000 Case Capacity.

The cool stores of the Port Huon Fruitgrowers' Co-operative Association Ltd., at Port Huon, Tasmania, with a capacity for 65,000 cases, have proved beneficial to growers. The buildings and plant are being extended to accommodate 110,000 cases.

Mulching the Modern Way PABCO THERMO-GEN MULCH

Performs at a low cost per acre the following vital functions—

CONSERVES SOIL MOISTURE by retarding evaporation and hence reducing your water bill.

DEVELOPS HIGHER SOIL TEMPERATURE retaining the heat in the soil and thus increasing the activity of nitrogen bacteria.

PREVENTS WEEDS saving you money in weeding costs and giving all soil nourishment to the plant itself.

**INSURES A LARGER AND CLEANER CROP
SUITABLE FOR FLOWERS, FRUIT AND VEGETABLES**

SOLD in ROLLS 3 feet wide by 300 feet long at 22/6

Write for literature to—

Jas. McEWAN & Co. Pty. Ltd. 119 Elizabeth St, Melbourne C.1.

PORT HUON FRUITGROWERS' ASSOCIATION.

AT the annual meeting of the Port Huon Fruitgrowers' Co-operative Association Ltd., which was held recently, the chairman, Mr. W. H. Calvert, M.L.C., stated in his report the value of land, buildings and machinery of the company now stood at £29,660. The paid-up capital was £20,071, and the reserves £5,873.

A cool store had been erected at Port Huon with a capacity of 65,000 cases.

Small Fruits.—Whilst the demand generally for all lines of fruit pulps, with the exception of Black Currant, was fair, the market value in England (which the Association is most dependent upon), remained at a low figure. The net results could not be determined until the stocks are cleared, which consisted mainly of Black Currant.

The Directors are Hon. W. H. Calvert, M.L.C. (Chairman), Messrs. B. J. Pearsall, M.H.A. (Deputy Chairman), F. Cole, J. Combes, A. Dickson, P. A. Feil, C. W. Frost, L. R. Shield, and L. Willams. General

manager, J. P. Piggott, A.I.C.A., M.H.A. Assistant manager and secretary, W. H. Beauchamp.

FRUIT PRESSURE TESTERS.

Success in California.

Quality of Fruit Improved, and Growers are Pleased.

IN a recent issue of the monthly Bulletin of the Californian Department of Agriculture, the following is stated:—

For the first time the use of the pressure tester as a standard for maturity has been instrumental in withholding shipments later than ever before in Sacramento County. Shipment of better quality fruit of larger size has been the definite result of the use of this, and both growers and shippers feel very optimistic.

(See picture on page 433.)

Tested and Proved!

CLENSEL

A Wonderful Insecticide and Fungicide. Clensel is not a new spray. It is used extensively throughout the world, and has

Won Great Appreciation
In
Australia.

The fruitgrowers' best friend. Non-Poisonous, non-inflammable. Destroys insect and fungus pests: a tonic for trees and plants.

Full details from

Bruce Anderson

54a Hoddle Street, Abbotsford. N.9. Victoria

GENUINE "BLACK LEAF 40" (Nicotine Sulphate)

Distributors

The Producers' Co-operative
Distributing Society Ltd.

Melbourne, Sydney, Leeton, Newcastle
Etc.

M. ASVARISCH

FRUIT BROKER

Copenhagen - Denmark

Consignments Received. Jorks Passage.

Telegraphic Address: Asvarisch, Copenhagen.

Inquiries for Victoria and South Australia.

to

J. B. MILLS & CO.

528 Collins Street Melbourne

Be Wise!

Protect Your Tomato Plants

— By Using —

Glass Cloth

The Strongest Material
of its Kind in the World.

Transmits the Ultra-Violet
Rays of the Sun.

Transparent — Water-proof —
Weather-proof.

Ideal for Hot-Beds, Young
Plants, Outbuildings.

Cheaper and Better than Glass.
3/- per sq. yard.

The name Glass Cloth is im-
printed on every yard.

Sole Distributors:

DONOHUE & HOLOHAN

Pty. Ltd.

369 Post Office Place, Melb.

Samples on Request.

Second Codling Test Results Announced :

VOLCK

again proves deciding factor in

CODLING CONTROL

The 1928-29 Government codling moth tests at Harcourt emphasise the conclusions drawn in the previous year. To quote the report (page 539, Journal of Dept. of Agriculture, Sept., 1929) :—

“arsenate of lead sprays, followed by Volck oil at a strength 1 gallon in 40 gallons of water, again gave a very marked increase in efficiency over any other spray.”

For two years in succession the tests at Harcourt have shown that calyx sprays with arsenate of lead, followed by monthly sprayings with Volck and water alone, save a far greater proportion of apples than any of the other five methods tested.

This means that you yourself, by spraying your apple trees in the same way this season, will get far bigger profits this year than if you spray in any other way.

Send by the first mail for complete details, spray programme, etc., and prices of Volck. All information post free.

VOLCK

And the Green Aphid Pest.

As a result of tests with three sprays just conducted at Shepparton by Messrs. H. W. Davey and A. A. Hammond, orchard supervisors of the Agricultural Department, the following spray was discovered to be outstandingly superior, and has been recommended for combating the green aphid pest:—

1 gall. Volck, 1½ pints nicotine sulphate, 1 gall. molasses, and 80 gallons water.

VOLCK is the original white oil spray, with over six years' wide commercial use behind it. In America it is the standard spray for scale pests on Citrus Trees.

Analysis:—

Active ingredients,	
Petroleum	83%
Inert Ingredients	17%

H.C. PANNIFLEX & CO.

26 MARKET STREET ————— MELBOURNE, C.1.

Sole Agents for N.S.W., Queensland, S.A., W.A., and Tasmania.

Australian Fruit and Produce Co. Ltd., Fruit Exchange, Sydney.

VICTORIAN FRUIT MARKETING ASSOCIATION.

At a representative meeting of the Executive of the above Association held on October 16, the Chairman and the Honorary Secretary reported that very definite co-operation had been accorded to the Association throughout the country, and the enrolments had been most satisfactory.

As the outcome of the recent meeting of members when the constitution was adopted, it was resolved that the election of Chairman and District Representatives be proceeded with.

The State has been divided into six districts, namely:—(1) Mornington Peninsula; (2) Gippsland; (3) Metropolitan; (4) Harcourt and district; (5) North Western; (6) Western.

Each individual member of any district has the right of nominating a member for the position of Chairman, and districts No. 1, 2, 3 and 4, have the right of nominating two growers to represent their district on the Executive. Districts No. 5 and

6, while having also the right of nominating a Chairman, only have the privilege of nominating one representative on the Executive.

Nominations close on November 5, on which date all nominations must be in the hands of the returning officer. The returning officer will then issue to each member a voting paper containing the names of the nominees received from the district, also the nomination received for Chairman, so that they may record their votes and return same to him on or before the third day of December, which is election day. The votes will then be counted, and the results announced through the press.

Further, the constitution provides that each grower shall have one vote, and an additional vote for every five hundred cases of fruit exported. Therefore, accompanying the nomination form issued to growers, will be a form asking for the above information, which, if supplied, will enable the returning officer to issue to such grower the ballot papers to which he is entitled.

Portland (14/10/29).—There is every appearance of a record crop of Apples. The weather has been mild and not too much rain. There has been an absence of rough, squally weather while the Jonathans have been in blossom. They are the main Apples grown here. Judging from appearances now, the trouble will be to keep up the vitality of the trees so that 1931 crops may not be a failure owing to the abundance of 1930.

Those who fully realise this have been liberal with fertilisers, and with early ploughing and constant cultivation hope to meet the call upon the trees. Jonathans are by far the most numerous, Romes next, say one-fifth of Jonathans, Crowns, Sturmers, Munros, and Delicious are also grown.

If all goes well, the coming crop will be four times that of last year.—W. J. Williamson, Portland, Vic.

The new N.S.W. Banana grading regulations are published in this issue.

Soil Cultivation is Essential for Successful Fruit Culture

Progressive Farmers,

Vignerons and

Orchardists

Use

"HARVEY"

Farming Implements

Write for full particulars of

Horse Drawn Implements
Tractor Implements
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ORCHARD & VINEYARD IMPLEMENT SPECIALIST.
FRUIT GRADERS & DEHYDRATORS.
POWER LIFT TRACTOR FARM & ORCHARD IMPLEMENTS

BOX HILL, E.11.
VICTORIA.

Agents All States.



Tractor Working the "Harvey" Two-way 16-Plate Power Operated Disc Cultivator, cutting 9 feet.

QUEENSLAND COMMITTEE OF DIRECTION.

Financial Statement.

Revenue from Freight Rebates.

THE profit and loss account of the Committee of Direction of Fruit Marketing, for the year ending June 30, was recently published.

In the profit and loss account the sum of £11,561/17/3 is shown as revenue from "freights" (to N.S.W. and Victoria, etc.), and £1,706/15/- "Stanthorpe freights." Other revenue items include:—Citrus levy, £1,672/5/6; Banana levy, £250/4/8; Pineapple levy, £834/5/4. Sundry trading profits bring the total revenue to £22,765/19/9.

The expenses include salaries, £3,821/18/7; sectional committee expenses, £2,438/3/8; other expenses amount to £5,030/13/9. The total expenses were £12,216/14/8, showing a "profit" of £10,549/5/1.

Citrus Growers' Section.

Mr. N. C. Richards, representative of the Citrus Sectional Group Committee on the Committee of Direction, in his report, commented on the recent display of N.S.W. Oranges in a Brisbane shop window, and urged Queensland growers to excel in grading and packing high quality fruit to hold the local market.

Petition to Abolish the C.O.D.

Continuing, Mr. Richards stated that a petition had been circulated, and was gaining the signatures of growers, the object being the abolition of the C.O.D. and the Citrus

Group Committee. While admitting the C.O.D. was not perfect, he urged growers to think seriously before doing anything to break up the organisation.

Citrus Importation.

A resolution was adopted supporting the effort of the N.S.W. Fruit-growers' Association to prohibit the importation of foreign citrus fruits.

HEAVY FREIGHT CHARGES.

In a letter to the Editor, a correspondent writes:—

"The Committee of Direction of Fruit Marketing balance sheet was recently published.

"The chief items of interest are that out of consignments of fruit sent by Queensland growers to New South Wales, Victoria, and South Australia, the Committee, after paying all expenses, loading, inspection and claims, have charged the individual consignors £11,561/17/3 more than they paid the various Governments. This "Keeping the Change" policy raises the question when you consider the financial state of most of the railways, "Why the various Governments should not retain this money instead of allowing an Association to retain these amounts for their general expenses.

"You will note also an item for cartage of £2,764/19/2, which is evidently retained in the same manner as the railway receipts. I understand in Melbourne and Sydney, and probably in Adelaide, all the cartage is done by contract.

"It is interesting to compare the lot of the Victorian grower who sends

his fruit to Queensland, and that of the Queensland grower who sends his fruit to Victoria. On the one hand the Queensland grower loses over £11,000 in freights, the Victorian grower who consigns his fruit to Brisbane is given all these services free."

New Zealand.

At the New Zealand Fruitgrowers' Federation Conference held in July, some interesting facts were noted.

The President's report showed the following export figures:—

Exports.	Apples.	Pears.	Total.
1927 ..	516,677	22,076	538,753
1928 ..	963,821	55,316	1,019,137
1929 ..	922,215	55,715	977,930

By the following figures it will be noted the growth in Pear shipments:—

1926 ..	9,410 cases
1927 ..	22,075 "
1928 ..	55,316 "
1929 ..	55,715 "

In referring to the work done by the Federation, a continuance of control was advocated.

Fire Blight.

The fireblight is causing much concern. Besides being established in all the fruitgrowing areas in the North Island, it has appeared in the South Island.

If growers will unite and use it, the legislation now on the statute books will go a long way towards controlling this disease. Growers should endeavor to destroy Hawthorn in the orchard areas, or keep it from flowering. When the disease appears the necessary precautions should be taken in the early stages.

The Most Effective Spray Known - - - NIK-KOF

4oz. Bottle, 3/- ½lb. Tin, 5/6

5lb. Tin, 27/6 10lb. Tin, 52/6

Postage 6d. extra
Freight Extra
WRITE FOR FREE FOLDER ON "NIK-KOF"

The New Cheaper and More Effective Material for Hot-beds, Greenhouses, etc.

Flex-o-glass is the chemically treated and specially-prepared fabric that is being hailed the world over as the ideal covering for hot-beds and greenhouses, etc. It is impervious to weather, can't be torn, broken or destroyed, costs less, is easier to instal, and, by admitting the ultra-violet rays that glass shuts out, it promotes healthy growth.

CLARK, KING & CO. PTY. LTD. 30 Guildford Lane, Melb. Cent. 10583

Orchardists and small fruit growers have long searched for the ideal spray. The spray that is not only economical to buy and use, but combines with this simplicity and a high degree of efficiency. To these men, NIK-KOF fulfills a long-felt want. More and more orchardists are turning to this spray to eradicate the insect danger from their trees, and it is significant that among the many letters of appreciation that reach us daily, there is not one case on record of NIK-KOF failing to do its work. Write at once for a free folder, fully explaining this remarkable preparation.

FLEX-O-GLASS

"It let's the Ultra Violet Rays through"

2/6 a yard, 36 ins. wide—Carriage Extra

Minimum of 3 yards by post

The Clyde Simplex Driers

For Drying
Fruit Vegetables and other Products

NO MORE WASTE FRUIT OR VEGETABLES

Simple - Self Contained

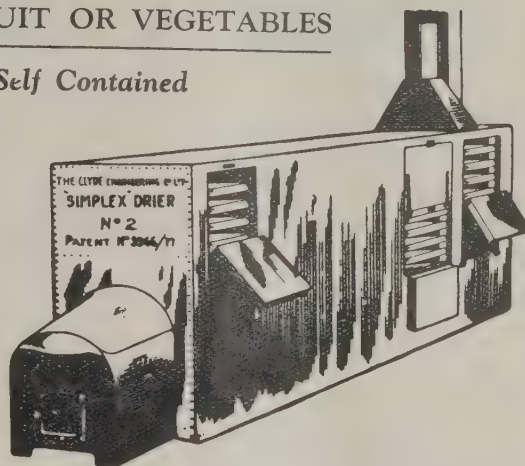
Made in Sizes to Suit

Householders
Small Orchardists

or

Large Factories

The
Clyde Engineering Co. Ltd.
GRANVILLE, N.S.W.



PORT OF MANCHESTER

Extracts from Official Market Reports

(Published weekly by British Minister of Agriculture) willingly forwarded to Growers, Exporters and others on application to address below. These records

PROVE Prices realised for Imported Fruit AT MANCHESTER Challenge Comparison

With results obtainable at any other market, as the following examples indicate:—

	Hull.		Liverpool.		London.		Manchester.	
	1st	2nd	1st	2nd	1st	2nd	1st	2nd
	quality.	quality.	quality.	quality.	quality.	quality.	quality.	quality.
18/1/29. Oregon Newtowns (case) ..	15/6	13/6	15/-	13/-	13/6	11/-	17/-	14/-
American Greenings (barrel) ..	35/-	30/-	31/-	26/-	35/-	30/-	36/-	30/-
25/1/29. Oregon Newtowns (case) ..	15/6	13/6	13/6	11/6	14/-	11/-	16/-	14/-
York Imperials (barrel) ..	36/-	29/-	28/-	22/-	30/-	24/-	36/-	34/-
Baldwins (barrel) ..	30/-	26/-	25/6	23/6	30/-	20/-	32/-	28/-
Russets (barrel) ..	34/-	28/-	31/6	23/-	30/-	25/-	35/-	33/-

GROWERS AND EXPORTERS! WHY NOT SHIP DIRECT to the best market as your competitors do?

For information as to charges, selling brokers and importers, etc., apply to:—

Cables & Telegrams—
"Portoman," Sydney.

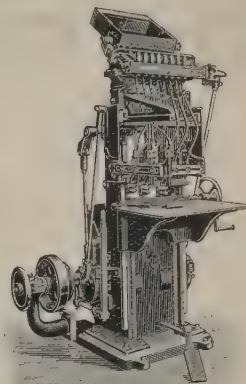
CAPTAIN W. J. WADE,
8 Bridge St.,
SYDNEY, N.S.W.

Subscribers' Payments Received.

We acknowledge with thanks having received, at Head Office, the following new and renewal subscriptions from our readers, from August 1 to September 30, 1929. Except where otherwise stated, the payment credits the subscriber to June, 1930. The list does not include payments to our branches and agents in the other States, nor deliveries through our wholesale distributors. Payments made since September 30, will be acknowledged next month. Subscribers who remitted during the period mentioned above, and are not mentioned below, are asked to advise us immediately.

Australian Fruit & Produce Co., W. D. Arnot, J. H. Atkins, J. Aggett, F. Attenborough, H. Andrews (Jne, 1931), H. Albers, Mrs. J. Alexander, Adelaide Chemical Co., Angaston Fruitgrowers' Co-op. Co., Abbots Bros., J. W. Andrew, E. W. Beckham, P. W. Burns, W. V. Bartram, A. W. Brain, N. Brookman, Burnside & Co., C. M. Brooke & Sons, A. Buckter, Bisdee Bros., F. E. Butler, F. Butler, H. R. Black, W. R. A. Bastow, N. B. Barnett, Barrett Lennard Bros., J. Balwin, Batlow Co-op. Packing Co., S. Beavis, A. S. Brennan, E. Borley, W. Benham (June, '31), J. Bunce, J. Bensley (Sept., '30), D. F. Calvert, Jas. Collins, T. N. Cuttle, F. H. Cole, W. P. Coleman, G. H. Cunningham, A. E. Chave, R. Crollick Ltd., H. C. Connor (June, '31), D. J. Corboy, Cowley & Co., E. R. Cotter & Co., G. Cole & Sons, Craddock & Young (Oct., '30), Central Citrus Association, Committee of Direction of Fruit Marketing, C. Connor, J. A. Catto, Chateau, Mildura, & Olivehood Co. Pty. Ltd., J. Davies (June, '31), E. W. Denning (Oct., '30), A. Elliot, J. C. Ellis,

A. R. Fankhauser, Fruitgrowers' Federation of N.S.W., Wm. Fitzsimmons, S. W. Fagan, A. C. Fricker, G. Fontanine (Sept., '30), E. H. Giddins, J. Gill, D. D. Grant (June, '31), A. F. Goode (June, '29), Mrs. T. Gaudion, J. K. Glasson, G. Grant, G. H. Goodhew, H. L. Goulter, Greenmeadows Fruit Co., W. M. Green, A. G. Gunner, G. T. Herbert (June, '29), J. Holroyd, A. Hochkins, Harris Bros., J. Hannenstein, A. S. Henderson, W. P. Hutchinson, J. Handasyde, H. D. Hay, P. Hansen (June, '31), R. O. Hauff, H. H. Hawken, A. J. Humberstone, L. L. Hill, H. A. Hanna, H. Hetherington, H. M. Jones, N. Jackes (June, '31), D. E. Jones, W. H. M. Kilgour, T. K. Kingstons, N. G. King (Oct., '30), H. M. Leggo & Co., R. Linton (Dec., '29), E. I. Lawford, P. Lawrey, Mat. Lewis, Victor Leggo & Farmers Ltd., John Lindfield, L. Loveday, H. Lineker, E. Lawford, V. D. Lang (July, '30), R. Lowe, L. W. Lewis, W. E. Moffatt, W. McRobert, H. Malone, A. Milne, J. McKenzie, E. P. Myers, Mathews & Sons, W. Muir, May Bros., R. Mays, C. Milner (Oct., '30), Jas. H. Mason, A. Mayor, Mildura Settlers' Association of Vic., E. Miers, C. Milner (Aug., '30), J. J. Moore (June, '31), Alf. Nott, G. V. Neumann, W. J. Nancarrow, K. Neil, W. M. McIver, W. H. Oakes, M. O'Brien (June, '29), J. H. O'Brien, Capt. A. W. Pearce, T. E. Parker, Park Orchard Co., P. Penn, Seward Plush, R. E. Petty, R. L. Prest, A. Peacock, Jr., Page Bros., W. Powell, S. Plush, S. Priestley, T. Petty, W. R. Prosser, W. A. Fatou, E. B. Pixley, E. J. Pearsall (Aug., '30), C. Plush, H. E. Pickworth, W. R. Pounsett, F. Pike, W. C. Page, Port Huon Fruitgrowers' Co-op., Producers' Markets Ltd., E. Chas. Pratt, T. J. Peart, R. N. Roberts (June, '29), D. H. Ross, E. J. Rule, Rosella Preserving Co., T. Russell, C. R. Roper, F. W. Roper, G. Roberts, Robinson Bros., Roberts &



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Case Nailing, Case
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which are Time
Saving and Profit
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Keep yourself acquainted with modern developments in machinery. Every new labor-saving device must affect you. If your competitor adopts it, it HANDICAPS you; if you adopt it, it AIDS you.

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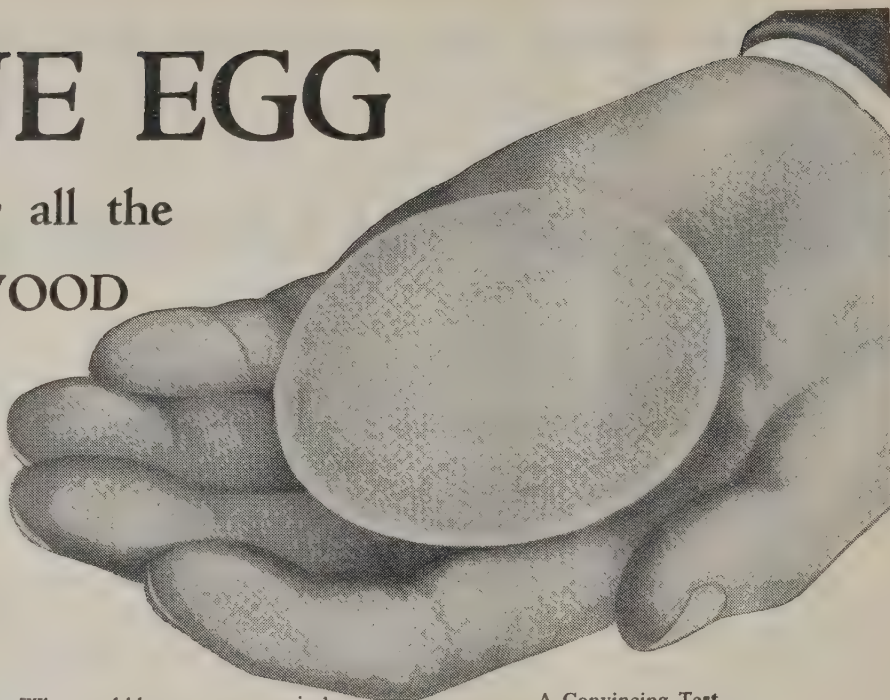
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BARKER, GREEN & PARKE PTY. LTD., 533 Collins St., Melb.
Tasmanian Rep. H. JONES & CO. LTD., Old Wharf, Hobart

ONE EGG

pays for all the
KARSWOOD

a bird
needs in
2 months!



Just think of it! What could be more economical and what more satisfactory? For that little dash of Karswood Poultry Spice (containing dried and ground insects) in the mash, can make all the difference in the world. Your birds will show not only a surprising improvement in general health and condition but also a marked increase in egg-production. This will be not a temporary forced increase. Karswood does not force, because it contains no forcing ingredients, such as gentian, chillies, and cayenne pepper. It coaxes gently and stimulates the birds to more active laying. Feed Karswood regularly, and the increase will be a permanent one.

"Always have Eggs—Winter and Summer"

Dear Sir:

I received your book (*The Bestway Poultry Book*) for which I thank you.

I would like to let you know what results I have got out of your Karswood Poultry Spice. I first gave it to 9 Black Orpington Pullets 6 months old, they were laying 5 to 6 eggs per day, but after a fortnight of Karswood Spice I got 7, 8 and 9 eggs per day and they kept same up for the winter months. I now give it to all my fowls with the result I always have eggs winter and summer, and again my fowls always look healthy. Different travellers who have called at my place say they have never seen fowls in all their travels that look as healthy as mine.

Again thanking you for your great help.
I might say you can use this as you like.

(Sgd.) GEO. McDERMOTT,
6/6/29. Amphitheatre, Vic.

KARSWOOD POULTRY SPICE

Increases egg-production without forcing, because it contains ground insects but no cayenne pepper, etc.

A Convincing Test

Dear Sir:

I have been using Karswood Poultry Spice for the last four years. I keep about 300 Poultry, half of them free range and the other half on the intensive system. The ones on the intensive system are in five different compartments of 30 birds in each, all White Leghorns, equal in type and age. The three compartments Karswood fed in three months average:—

Jan.	601	per compartment	30	birds
Feb.	589	"	"	"
Mar.	565	"	"	"

Two compartments without Karswood Spice average for same period:—

Jan.	397	per compartment	30	birds
Feb.	325	"	"	"
Mar.	298	"	"	"

A reduction of 735 eggs.

Yours faithfully,

(Sgd.) W. UNSWORTH,

Thomas Estate, Shepparton,
Victoria.

20/5/29.

Make This Test.

Go to your local grocer, storekeeper, or produce dealer. Get a 1/- packet of Karswood Poultry Spice, then give it to half-a-dozen of your birds, in accordance with the directions on the packet. Do not expect immediate results —Karswood works naturally, not suddenly. It takes at least a fortnight to produce results, but they are good and sure.

Supplies

Karswood Poultry Spice is obtainable from all wholesalers and stores at the following standard retail prices: ½lb. packet 1/-; 1lb. packet 2/-; 7lb. tin 13/-; 14lb. tin 25/-; 28lb. tin 48/-.

S.M.29



MONTHLY REMINDERS.

Keep the young stock growing.
* * *

When the chicks are eight to ten weeks old they are brooder weaned.
* * *

It is then time to move them to fresh grounds.
* * *

This is also the time to separate the sexes.
* * *

Young cockerels not required should be sold as quickly as possible.
* * *

The early marketing of cockerels will make more room for the pullets.
* * *

The summer management of these growing pullets will play an important part in determining the profits of the next season.
* * *

The young pullets should be fed a balanced ration.
* * *

This might include a good growing mash and a scratch feed of grain.
* * *

Many successful breeders keep a dry growing mash in the hoppers continuously, and feed scratch grain in addition twice daily.

The amount should be determined by the development and condition of the birds.
* * *

Pullets should not be forced into egg production.
* * *

If they appear to be developing too rapidly, substitute more scratch in place of the growing mash.
* * *

It must be remembered, however, that a pullet to stand up under heavy egg production must have good body weight and stamina.
* * *

Greens should be fed regularly, and charcoal, grit and clean water are essentials.
* * *

See that the pullets have ample shade and range during the warm summer months.
* * *

Pullets confined to a small area will not develop as well as those which have more range.
* * *

Avoid soil contamination.
* * *

Birds reared on stale and contaminated land become unthrifty and often unhealthy.
* * *

Suitable housing should be provided and the birds kept free of vermin.

"The Australasian Beekeeper"

The leading Bee Journal in the Southern Hemisphere.

A monthly magazine entirely devoted to beekeeping. Published in Australia for Australian Conditions. Subscription (5/- per year, prepaid, post free), may start now.

Free sample copy available on application to the publishers, Pender Bros. Ltd., Box 20, West Maitland, N.S.W.

Beekeeping

Storing Combs

Combs can be stored indefinitely if they are free from moth eggs. If they are sulphured and made moth-proof, and in twelve or fourteen days are sulphured again and then stacked so that all cracks can be pasted up to keep the moths out, they can be left with safety for one or two years. In the season 1927-28 two apiarists were advised to stack their combs. One carried out the advice given, and to-day his combs are in good order and in use. The other apiarist inspected the combs, could not see any moths, and then wrapped each comb separately in paper. The idea was good, but the fact was overlooked that moth eggs had been deposited

in the combs before wrapping, and the grubs hatched from these eggs ate the combs to pieces.

Eat More Honey

The Cake Section of the American Bakers' Association recently sent a questionnaire to its members. One of the questions which was answered by leading bakers operating in twenty-four States was:—

"What will honey do in a cake mix?"

Some of the answers were as follows:—

It retains moisture.
It colors rapidly.
It keeps the cake soft and moist.
It has a distinctive sweetness.
It increases the volume of the cake.

It has a good spreading action.

It develops a "chewy" mix.

These are all good reasons for using honey in cake formulas, and American Honey Institute is preparing formulas for cake and bread bakers which will help them better to use honey in their mixes and doughs and by personal observation to see just how honey helps to make better goods which have the qualities emphasised in the inquiries of the Cake Section of the National Bakers' Association.—"American Bee Journal."

Unless you live honestly within your own means, you will be forced to live dishonestly upon the means of others.

The Fruit Trade

Market Reports and News Items

REPRESENTATIVE FIRMS, FRUIT MERCHANTS, AGENTS, EXPORTERS, Advertising in this Journal.

NEW SOUTH WALES.

Sydney. Chilton, F., City Fruit Markets.
Louey Pang & Samuel Wong Ltd.,
Thomas St., Haymarket.

VICTORIA.

Melbourne.
Andrew, Fred J., 416 Lit. Collins St.
Cave, F., & Co., Melbourne.
Colombie, H. G., Temple Court.
Davis, J., Western Market.
Mellor, F. R., 440 Elizabeth Street.
Millis, A., & Sons, Western Markets.
Lister, G., Western Market.
Mumford, J. G., 449 Flinders Lane.
Pang & Co. Ltd., H. L., Little Bourke Street.
Producers' Dist. Society, Western Market.
Ross, J. W., Western Market.
Silbert, Sharp & Davies, Western Markets.
Stott & Son, T., Western Markets.
Tim Young & Co. Pty. Ltd., Western Market.
Veal, F. W., 49 William Street.
Woolf, G., Western Market.
Wholesale Fruit Merchants Assn., J. D. Fraser, Temple Court, 428 Collins St., Melbourne.

QUEENSLAND.

Brisbane.
Barr, A. S., Fruit Exchange.
Collard & Mackay, Fruit Exchange.
Comino Bros. Ltd., Fruit Exchange.
Cooksley & Co., Fruit Exchange.
Geeves, H. V., Fruit Exchange.
Robsons Ltd., Fruit Exchange.

TASMANIA.

Hobart.
E. R. Cottler Pty. Ltd., 88 Collins St.
Jones & Co. Ltd., H., Fruit Exporters.
Peacock & Co., W. D., Fruit Exporters.
and at London.

Launceston.
Bender & Co. Pty. Ltd., 100 Elizabeth Street.

NEW ZEALAND.

Dunedin.
Co-operative Fruitgrowers' of Otago Ltd.

GREAT BRITAIN.

London.
Charles Knights Ltd.
M. Isaacs & Sons Ltd.
Margetson & Co. Ltd., Covent Garden.
Monro, Geo., Ltd., Covent Garden.
Poupard, T. J., Ltd., Covent Garden.
Ridley, Houlding & Co., Covent Garden.

Hull.
Connelly Shaw Ltd.
White & Son Ltd.
W. G. Gosling.
The Port of Hull, London and N.E. Railway, Rep., Major H. S. Cole, c/o Burns, Philip and Co. Ltd., 7 Bridge St., Sydney.

Manchester.
The Port of Manchester, rep., W. J. Wade, 8 Bridge Street, Sydney.

Liverpool.
MacGeorge & Jardine.
Woodall & Co.

Bristol and Southampton.
Bristol Fruit Brokers Ltd.

Cardiff, Belfast and Dublin.
Connelly, Shaw Ltd.

Glasgow.
Russell, Turnbull & Co.

GERMANY.

Bremen.
Fruchthandel, Gesellschaft.
Hamburg.
Algemeene Vruchten. Import Maatschappij (also Cologne).
Astheimer, P. H., & Son, Fruchthof.
Heinz-Tiencken.
Lutten, J. H., & Sohn, Hamburg.
Stier, Aug., Fruchthof, Reps. J. B. Mills & Co., Bank House, Melbourne.
Timm & Gerstenkorn.

HOLLAND.

Amsterdam and Rotterdam.
Algemeene Vruchten Import, Maatschappij.

DENMARK.

Copenhagen.
Kobenhavns Fugtauktioner.

Overseas Markets.

Great Britain.

London.—Fruit prices in Great Britain are quoted in the "Fruit, Flower and Vegetable Trades' Journal" of September 7 as follows:—

Covent Garden (Sept. 4).—There is a fair demand for good English Apples, but the market is overloaded with second-grade fruit. Trade is slow in Oranges; some New Zealand Apples ex-cold store were in fair condition, bringing from 10/- to 14/- per case; American Gravensteins, 15/- to 17/-.

Spitalfields (Sept. 3).—Culinary Apples in keen demand; Californian Grape-fruit, 20/- to 30/- per case; Sunkist Oranges, 16/- to 20/- per box; South African, 11/- to 15/- per case.

Birmingham (Sept. 4).—English fruit supply is plentiful; Californian Newtown Apples, 12/- to 14/-; New Zealand, 16/- to 20/-.

Bristol (Sept. 4).—Californian Oranges, 16/- to 22/-; Apples: New Zealand Sturmers, 14/- to 16/-; Dougherty, 14/-; Californian Gravenstein, 16/- to 18/-.

Edinburgh (Sept. 4).—Apples: Gravensteins, 16/- to 18/-; English cooking, 14/- to 18/- per cwt.; South African Oranges, 12s 12/-, 126s 12/6, 150s 13/6, 176s and 200s 15/-.

Glasgow (Sept. 5).—Apples: American Gravensteins, 15/- to 17/- per case; English cooking, 10/- to 13/- per half-barrel (56 lbs.).

Hull (Sept. 4).—Almera Grapes, 11/6 to 13/- per barrel; Oranges, sound, Californian 252s 15/- to 15/6; Sunkist 216s, 18/6.

Liverpool (Sept. 4).—English Apples plentiful, but there is not

much demand for small fruit; large Apples are a good market. Prices: American Gravensteins, 14/- to 16/- per box; English Derby, Worcester, Grenadier, 5/- to 7/- per bushel; Warner's King, 18/- to 20/- cwt.; Virginia York Imperial, 25/- to 33/6 per barrel; King David, 40/- per barrel.

Manchester (Sept. 3).—Apples: Gravensteins, 14/- to 17/-; Pears, Californian Beurre Hardy, 23/- to 26/- per box.

Newcastle-on-Tyne (Sept. 3).—Oranges: South African, 10/- to 12/3; Brazilian, 8/9 to 11/9; Californian, 16/6 to 20/6; English, 21/- to 22/- per cwt.

Australasian Markets.

New South Wales.

Sydney (23/10/29).

Apples.—Tasmanian, dessert, Democrats, 17/- to 22/-; Scarlets, 12/- to 16/-; Croftons, 14/- to 17/-; Sturmers, 8/- to 13/-; French Crabs, 11/- to 14/-; local Granny Smiths, 15/- to 20/- per bushel case. Bananas (genuine grades).—Special, 30/- to 34/-; choice, 26/- to 30/-; standard, 22/- to 26/-; plain, 18/- to 22/-; inferior, 16/- to 18/- per case. Cherries, 20/- per box. Citrus Fruits.—Lemons, local, extra choice 20/-, choice 16/- to 18/-, medium 12/- to 14/-, small 8/- to 10/-; irrigation, 14/- to 20/-; Mandarins, extra choice 22/-, choice 16/- to 20/-, medium 12/- to 14/-, small 6/- to 10/-; Oranges, navel, choice 18/- to 20/-, extra choice 22/- to 24/-, medium 12/- to 14/-, small 7/- to 11/-; irrigation, 12/- to 20/-; Valencias, extra choice 18/-, choice 14/- to 16/-, medium 10/- to 12/-, small 7/- to 9/-; irrigation, 15/- to 18/-; common, choice 16/- to 18/-, medium 12/- to 14/-, small 7/- to 9/- per case. Grapes: American, Red Malagas, 22/- to 25/-; Emperors, 24/- to 26/- per 32 lb. cask. Loquats, 4/- to 16/- per half-case. Passion-fruit, local, 4/- to 14/- per half-case. Pawpaws, 10/- to 14/- per case. Pears, Victorian, 12/- to 22/- per bushel case. Pineapples, Queens, 8/- to 12/-; few 14/- per case. Strawberries, local, 12/- to 24/- per dozen punnets; Queensland, 4/- to 6/- per tray.

Victoria.

Melbourne (26/10/29).

The following are the wholesale prices ruling at the Western Market:—Apples, good to choicest eating, 13/- to 18/- per case; cooking, 12/- to 16/-; few special higher; green Bananas, Queensland special, 29/- to 30/-; choice, 28/- to 29/-; standard, 25/- to 28/-; plains, 20/- to 24/- per

double case; Lemons, best counts, 12/- to 14/- per case, a few specials higher; Common Oranges, 12/- to 18/-; a few special varieties higher. Valencias, good quality to 20/-, few specials to 22/-; faulty or dry difficult to quit; Navel Oranges, medium quality, to 15/-; good quality, 20/- to 22/-; few special higher. Pine-apples: Queens, 13/- to 16/-, a few to 17/- per double case; Papaws, 14/- to 16/-.

The Melbourne representative of the Federal Citrus Council of Australia reports that prices were as follow:—Navel Oranges average standard shed pack, counts 126's upwards, from 18/- to 20/-; faulty lines, from 15/-; selected packs, 24/- and 25/-; a few specials, 26/-; Valencias, good average standard, 160's to 200's, from 15/- to 22/-; 112's, from 11/-; common Oranges, best counts, 15/- to 21/-; Grape Fruit, average standard, 20/-; specials, 25/- to 28/-; some selected higher; Lemons, medium counts, 12/- to 15/-.

South Australia.

Adelaide (19/10/29).

Apples, eating, 18/- to 20/- per case; cooking, 16/- to 18/-; Bananas, Fiji, 36/-; Lemons, 13/-; Loquats, 11/-; Almonds, 10/- to 12/- per doz. lb.; Brazil nuts, 12/-; Coconuts, 4/- per doz.; Peanuts, 11/- per doz. lb.; Walnuts, 11/-; Barcelona nuts, 12/-; Oranges, Common, 11/- to 12/- per case; Oranges, Navel, 17/- to 18/-; Passion Fruit, 34/-; Pineapples, 18/-; Strawberries, 2/- per lb.

Queensland.

Brisbane (22/10/29).

Local Fruit.—Oranges, Tambourine, large, 14/- to 18/- a bushel case; North Coast, 13/- to 16/-; second crop, colored, 9/- to 11/-; green, 5/- to 7/-; Navels, 10/- to 14/-; Mandarins, to 22/-; small and green, 5/- to 7/-; Mangoes, 9/- to 11/-; Lemons, 5/- to 9/- a quarter case; Limes, 3/- to 6/-; Grape Fruit, 3/- to 5/-; Passion Fruit, specials, 14/-; others, 6/- to 12/-; Loquats, 6/6; Papaws, best, 6/- to 8/- a flat Orange case, 4/- to 6/- a dump, second grape 2/- to 3/-; Pineapples, smooth, 5/- to 8/- a case, 1/6 to 7/- a doz.; rough, 8/- to 12/- a case, 1/- to 8/6 a doz.; Strawberries, 6/6 to 10/- a doz. boxes; Gooseberries, 1/1 a quart. Imported Fruit.—Apples, Tasmanian, S.T.P., 15/- to 19/- a bushel case, F.C., 14/- to 19/-; Victorian, Jon., 17/- to 19/-; R.W., 16/- to 18/-; R.B., 16/- to 18/-; S.T., 15/- to 18/-; Yates, 22/- to 24/-; S.T.P., 14/- to

16/-; D.F., 11/- to 13/-; Pears, Victorian, Jos., 17/- to 20/-; B.P., 15/- to 20/-; M.C., 14/- to 20/-; W.N., 20/- to 24/-; Oranges, N.S.W., Valencias, 17/- to 18/-; Grapes, Californian, 30/- a barrel (32 lb.).

West Australia.

Perth (19/10/29).

Apples, Dunn's Seedling, dumps, 10/- to 15/- per case (special to 17/6, others from 7/-); Rome Beauty, 10/- to 17/3; Yates, 14/- to 20/6 (small from 5/6); Granny Smith, 14/- to 19/6; Cleopatra, 9/- to 16/-; Doherty, 9/- to 16/-; other varieties, 11/- to 16/6 (others from 5/-); Oranges, plain, flats, 9/- to 14/- (special to 15/3; others from 6/6); dumps, 10/- to 15/- (special to 22/9, others from 8/-); Navel, flats, 10/- to 17/- (others from 6/-); dumps, 12/- to 18/- (special to 23/-, others from 9/-); Lemons, 6/- to 10/- (some to 11/6; others from 3/6); Mandarins, 9/- to 16/-; Tomatoes, flats, 15/- to 24/- (special to 28/-); Loquats, 10/- to 19/- (others from 6/-); Passion, 26/-; half dumps, 22/-; half cases, 12/6 to 13/6; Strawberries, 15/- to 28/- per doz. punnets (inferior from 8/-); Cape Gooseberries, 7d. to 7½d. per lb.

Tasmania.

Hobart (19/10/29).

There is a good demand for all desert varieties. Delicious, 10/- to 17/-; S.T.P., 8/- to 12/-; Democrats, 10/- to 14/-; R.B., 13/- to 14/-; C.P.M., 12/6 to 16/-; other spotty and inferior grades sold from 2/- to 7/- per case, according to quality.

New Zealand.

Apples: Delicious, 14/6 to 19/-; Rome Beauty, 13/6; Sturmers, 7/- to 15/-; Democrats, 10/6; cooking, 8/6 to 10/6. Dessert Pears: Winter Coles, 14/6 to 17/6; Winter Nelis, 10/6. Passions: Australian, 23/9; American Grapes, 27/6 to 32/-; American Valencias, 42/6; Victorian navels, 28/-; Lemons: Missions, 70/-; Australian, choice, 27/6. Grape-fruit, 40/-. Bananas, ripe, 30/-.

"Clensel" Spray.—The spray known as Clensel has been well received by fruitgrowers in Australia, following on similar successes in other parts of the world. Clensel is described as an insecticide and fungicide, non-poisonous, yet destroying insect life. Supplies and information are obtainable from Bruce Anderson, 54a Hoddle-street, Abbotsford, N.9, Victoria.

Fruit Carrying Steamers.

"Fordsale" and "Ferndale" Now Have More Refrigerated Space.

THE Aberdeen and Commonwealth steamship line (previously Commonwealth Government Line) announce that, in addition to improvements in the passenger and cargo accommodation on the "Bay" steamers, there have been improvements in refrigerated cargo space of the other ships of the line.

The "Fordsale" and the "Ferndale," two successful fruit-carrying steamers, have recently been altered to provide additional space for refrigerated cargo.

Formerly each vessel had 144,800 cubic feet of refrigerated space for the carrying of fruit. This has been increased to 320,000 cubic feet. Instead of taking only 63,000 cases of Apples the ships will now be able to carry 140,000 cases. Similarly the space provided for meat has been increased. Previously this amounted to 158,300 cubic feet, but it has been extended to 381,000 cubic feet. Each vessel will have space for 190,000 carcasses of lamb, this being an increase of 110,000 carcasses.

South African Oranges.

Grading Criticised in England.

Writing in the "Fruit, Flower and Vegetable Trades Journal," a retail fruiterer states that the marks on cases of South African Oranges are unreliable. In many instances the description sealed by the South African Government has been erased and a false description substituted.

Continuing, this correspondent states:—

Cape Oranges are consigned in one standard box for all counts. Generally speaking, no two counts are sold at the same price. Now, assuming there is a parcel of 1,000 boxes of 126's, and 150's are worth 3/- more than 126's, by erasing the original number 126, substituting the number 150, and selling at the 150 price, a fraudulent profit of 3/- on 1,000 boxes, or £150 in addition to the ordinary profit, is made.

Vegetable Culture.

Notes for November.
What to Sow and Plant.

Make successive sowings of:—

French Beans, Sweet Corn, Pumpkins, Squash and Vegetable Marrows, also Salads, such as Radish (Crimson Giant Forcing and Icicle), Cucumber (Apple-shaped), Lettuce (Hanson and Wonderful), Beet (Egyptian Turnip-rooted), Mustard, Cress, and Spring Onions.

Seedlings of Summer Lettuce, Cabbage, Cauliflower, Melons, Pumpkin, Cucumber, and Cape Gooseberries, may also be planted. It is also the best time to plant out Tomatoes. By doing so now the plants usually escape the devastating wilt which is so prevalent amongst those planted earlier.

Sow Capsicum and Chili in rich soil in a warm situation.

Kohl Rabi is a delicious vegetable for present sowing, as it takes the place of Turnips (which are really satisfactory when sown now). It must be grown in good, rich ground, and both the leaves and the root of bulbous swelling can be cooked, although the latter is the principal part used. The best time to use it is when it is the size of an egg, and when boiled in its skin and served and cut in half and scooped out it makes a very melting and dainty morsel. The leaves can be boiled like Cabbage.

Seed should be sown in rows 3 feet apart, and thinned out to 9 inches between each plant.

Silver Beet, if sown now, makes quick growth. In warm weather it comes up in a few days, and is ready for use in from three to four weeks. The whole plant can be cut like Spinach, and when boiled makes a delightful dish.

Hamburg Fruit Market

One of the Best Outputs

for

AUSTRALIAN FRUIT

GUSTAV BEY

Fruit Broker & Importer

Fruchthof, Oberhafenstrasse
Hamburg, Germany

Shipping "BEY" Brand

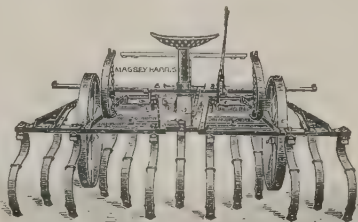
AGENTS:

Victoria: I.F.M. Co., 410-414 Flinders-lane, Melb.

Tasmania: H. Claude Little, Tasma House, 85a
Collins St., Hobart.

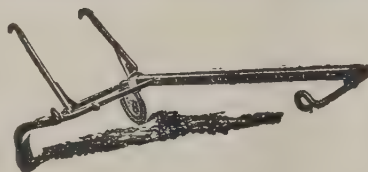
Massey Harris Orchard and Vineyard Implements

EIGHTY-THREE years' experience in the manufacturing of implements for the farmer and orchardist are behind the complete range of machines that are available from the Massey-Harris Co. There is a Massey-Harris implement for every purpose.



Nine-Tooth Orchard Cultivator.

This cultivator is useful for vineyard or for ordinary field cultivation. The steel teeth with reversible points may be set to cultivate behind the wheels. For orchard work, extensions can be furnished, as illustrated, which cultivate under the over-hanging branches of the trees. Pole and trees or forecarriage optional.



Grape and Berry Hoe.

This is an excellent implement for the cultivation of Grapes, berries, Peaches, Plums, and small trees of all kinds. It can be adjusted to different widths of rows, and the horse hitches to the side of the pole, out of the way of vines and bushes.



Orchard Disc Harrow.

Illustrated Folder Free on Application.

Orchard Extension Disc Harrow.

This implement is reversible and covers the roots or not, as you wish. The gangs are interchangeable in their position on the frame so as to throw the soil to or from the trees and vines. It is adjustable to different depths of cultivation. The extension arrangement as illustrated allows for cultivation under the trees without injuring the branches. Supplied with 10 or 12 16-inch discs.



Spring-Tooth Lever Harrow.

By means of a lever the teeth can be set to work at different cutting angles with relation to the soil. Each tooth is fitted with a reversible point, which gives it double wear.

MASSEY HARRIS & Co. Ltd.

AGENTS EVERYWHERE

Melbourne, Sydney, Brisbane
Adelaide, Perth, Christchurch

Clean Fruit Assured

When Neptune Sprays are Used

NEPTUNE
Prepared Spraying Oils
"A" and "C"

BERGER'S
Arsenate of Lead
(Paste and Powder)

SICILIAN
Sublimed Sulphur

NEPTUNE
Lime Sulphur Solution

GENUINE
Black Leaf 40

AUSTRALIAN
Powdered Sulphur

NEPTUNE
Spray Spreader

MAXIMUM RESULTS—
MINIMUM COSTS



All NEPTUNE SPRAYING MATERIAL can be obtained
through Agencies and Associations throughout Australia
or direct from

Neptune Oil Co. Ltd.

River Street, Richmond, Victoria

BRANCHES

365 Kent St.,
Sydney.

133-5 Mary St.,
Brisbane.

Worando Build-
ings, Grenfell
St., Adelaide.

96 St. George's
Terrace,
Perth.

c/o Murdoch
Bros. Pty. Ltd.,
Market Place, Hobart.

c/o Taylor Bros.
Charles St.,
Launceston.

"CLEAN FRUIT" PAMPHLET & SPRAY CALENDAR SENT ON REQUEST.

LOOK AT THE MAP!

The Port of Manchester

Is the Best Market and Distributing
Centre for serving 12,000,000 Consumers

IN

"The Heart of Industrial England"

The following extracts from "Agricultural Market Reports" (issued weekly by the British Board of Agriculture) indicate the average prices realised last season for Australian Apples of certain varieties at Manchester and other ports respectively:—

COMPARISON OF AVERAGE PRICES.

WEEK ENDING—	VARIETY:	HULL Quality.		LIVERPOOL Quality.		LONDON. Quality.		MANCHESTER. Quality.	
		1st.	2nd.	1st.	2nd.	1st.	2nd.	1st.	2nd.
1929—									
24th May—	Cleopatra	15/6	14/—	15/—	14/—	15/6	14/6	17/—	16/—
31st May	"	15/6	14/—	15/—	14/—	16/—	15/6	17/—	16/—
7th June	"	15/6	14/—	16/6	15/—	16/—	15/—	18/—	15/—
14th June	"	16/—	14/—	16/6	15/—	16/—	15/—	17/—	15/—
21st June	"	17/—	16/—	17/—	15/6	—	—	19/6	17/6
28th June	"	20/—	18/—	20/—	17/6	—	—	22/—	20/—
5th July	"	21/—	19/—	20/—	18/—	—	—	25/—	22/—
24th May—	Jonathan	15/6	14/—	15/—	14/—	16/—	14/6	17/—	16/—
31st May	"	15/6	14/—	15/—	14/—	16/—	15/—	17/—	—
7th June	"	15/6	14/—	15/—	13/—	15/—	14/—	18/—	16/—
14th June	"	16/—	14/6	15/6	14/—	16/—	15/—	17/—	15/—
21st June	"	16/—	14/6	16/6	15/—	—	—	18/—	16/—
28th June	"	18/—	17/—	19/—	16/6	—	—	22/—	18/—
	Sturmer								
14th June—	Pippins	14/—	13/—	14/6	13/6	—	—	16/—	14/6
21st June	"	—	—	—	—	—	—	—	—
28th June	"	18/—	16/—	18/6	16/—	—	—	22/6	18/—
5th July	"	18/6	16/—	20/—	18/—	—	—	24/—	22/—
12th July	"	20/—	17/6	20/—	18/—	—	—	22/—	20/—
19th July	"	20/—	18/—	21/—	18/—	—	—	21/—	20/—
26th July	"	21/—	19/—	21/—	18/—	—	—	21/—	20/—

NOTE.—No quotations in respect of London prices are included in the "Agricultural Market Reports" for the weeks where blanks are shown in the above comparative statement.

Over 66,000 tons of Imported Apples are consumed annually in Manchester's
Economic Area

but comparatively few of these are from Australia or New Zealand, owing to infrequency of direct shipment and the cost of transhipment from London, which averages 8½d. per case plus deterioration due to manifold handling.

Ship Direct to Manchester Docks

You cannot afford to neglect this Great Market

Particulars re selling brokers, forwarding rates to interior towns, etc., on application to—

Cables & Telegrams—
"Portoman," Sydney.

CAPTAIN W. J. WADE,
Representative Port of Manchester
8 Bridge St.,
SYDNEY, N.S.W.

HAMBURG**HEINR.
TIENCKEN****Fruit Importer
HAMBURG**

Having handled Australian apples for the past 20 Years, we are in a position to give the best service in the disposal of the fruit at a minimum of expense.

Hamburg is the distributing centre for an immense area of the continent of Europe, where there is a growing demand for Australian apples.

We require much larger quantities, and invite growers to ship through our Victorian representative:

F. R. MELLOR
440 Elizabeth Street
MELBOURNE
'Phone: F.2387.

Consign to—

HEINR. TIENCKEN
Hamburg

LIVERPOOL**Woodall & Co.****FRUIT BROKERS,****Temple Court, . . . Liverpool.**

Liverpool, situated in the county of Lancashire (which has a population larger than that of Australia), possesses every facility for the quick distribution of fruit.

Auction sales are held at the Liverpool Fruit Exchange every Monday, Wednesday, and Friday, and are attended by buyers from all parts of the United Kingdom.

Our long experience enables us to handle Australian fruit to very best advantage. We require

BIGGER SHIPMENTS.

Advances made to cover cost of packing, and shipping expenses.

Australian Growers!**Consign to—****Woodall & Co.**

Consult our Melbourne Agent:

F. R. MELLOR
440 Elizabeth Street, Melbourne.

HULL W. G. GOSLING

FRUIT BROKER
7 Humber Street, Hull

Rapid Handling

Best Prices

Low Charges

Hull, possessing the second largest fruit market in the United Kingdom, serves a large consuming population in the busy industrial centres of England and Scotland.

Specially constructed refrigerator vans carry the fruit direct from the steamer to inland destinations by express trains.

Hull occupies an unrivalled position for the re-export of Australian fruit to the Continent. Several regular lines of steamers trade to all ports in northern and central Europe.

We have handled Australian apples for many years past, and have built up a large and increasing trade. We require

THOUSANDS OF CASES MORE THIS SEASON
than we received in 1928—the last big year.

We strongly emphasise the need for accurate sizing and firm packing in order to maintain and expand the demand for Australian fruit. We can do the rest.

THE BEST ADVERTISEMENT FOR ANY FIRM IS TO SHOW SATISFACTORY FIGURES FOR THE GROWER IN THE LAST LINE OF THE ACCOUNT SALES. COMPARE OURS.

Victorian Agent:

F. R. MELLOR
440 Elizabeth Street—Melbourne, C.1.

Phone : F 2387

Who will supply Cases, Labels, Wrapping Paper, Picking Bags, and all Packing Requisites.

Charles Knights Ltd.

SPITALFIELDS MARKET

London E.1.

Also at COVENT GARDEN MARKET W.C. and STRATFORD, MARKET, E.

Solicits Consignments of Australian Apples and Pears

Sales on commission by private treaty only. We do not buy from any source.

We occupy extensive premises in the main street of the NEW SPITALFIELDS MARKET EXTENSION—the largest fruit and vegetable market in the United Kingdom. Our facilities for rapid and efficient handling are unsurpassed.

Spitalfields (the nearest market to the London Docks and Wharves, with railway connections to all parts of Great Britain), has recently been remodelled on up-to-date lines at a cost of £2,000,000. It possesses roads and approaches far in advance of any market in London, thus providing for the increasing motor transport.

In addition to 7,000,000 potential consumers in the Metropolis, we have customers in practically every town of importance in the British Isles: therefore, we are in a position to place consignments where the keenest demand prevails.

Every consignment received is sold on its merits, strictly in accordance with the HORTICULTURAL PRODUCE (Sales on Commission) ACT, 1926, and each individual sale recorded; therefore, consignors can be assured of receiving exactly the same price as their fruit realises.

Private sales have a distinct advantage over auction sales, the former ensuring more stable prices. Average prices obtained are ample proof of this.

We strongly recommend accurate grading, and a uniform weight of 40 lbs. to the case; also that no 2½in. or 3in. Jonathans be shipped: then a higher average price will automatically result.

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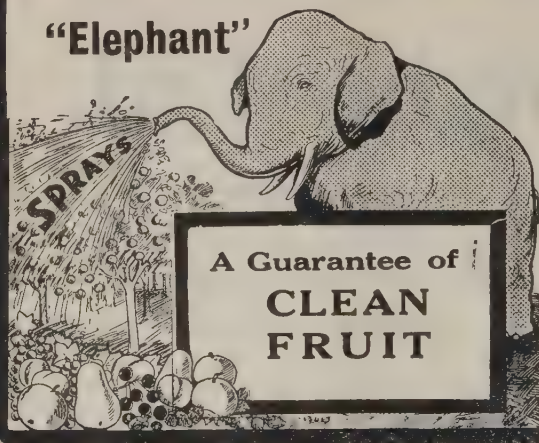
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Sprays Only

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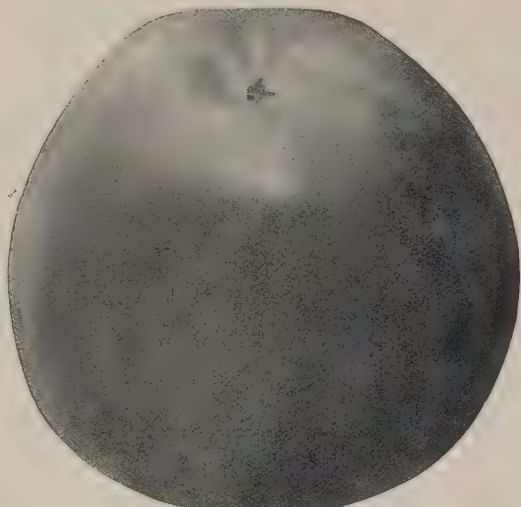
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King David.

FRUIT TREES

Mr. Commercial Grower!

AN OPEN LETTER

Vast possibilities await the man who looks ahead—not next year or the year after, but for many years. Can he visualise the millions of people in this great universe who want fruit? Now, Sir! think for yourself—a marketing business has been instrumental in placing before these fruit-hungry people the ways and means of supplying this great necessity of life.—One man, first try, first season, sold 55,000 cases Apples, and this season something like 120,000 will be the figures sold in this way. It has been done, and will be done, that we venture to say that in 5 years hence Australia will not have a surplus, but a shortage of hundreds of thousands cases of fruit. Get busy—for your old orchards will be going back, and you will not have the fruit when required. Get in on the boom.

Information, etc., from

JOHN BRUNNING & SONS

SOMERVILLE NURSERIES - SOMERVILLE - VICTORIA - AUST.

Established 1866.

Code: Bentley's Complete Phrase.

"FRUIT WORLD OF AUSTRALASIA."

Representing the Deciduous, Citrus and Dried Fruits Industry of Australasia.

Published the First of Each Month.

Editorial and Management Notices.

Articles and Photographs.—The Editor will always be very pleased to receive articles and photographs for publication. Articles on spraying, pruning, drainage, marketing, and other cultural matters, and reports of meetings, are welcomed. Please write on one side of paper only; include name and address (not necessarily for publication). Press matter sent in an open envelope, marked "Printers' MSS.," postage rate: 2 ozs., 1½d. Photographs, if sent in an open-ended package, marked "Photos. only," will travel at 2 ozs., 1½d. A short description of the photos. should be written on the back.

We do not hold ourselves responsible for the views expressed by our correspondents.

Subscriptions.

The annual subscription, post free within Australia and New Zealand, is 8/6. All other places, 10/6, post free. New subscriptions can commence at any date. Subscribers should notify us immediately of any change of address.

Renewal Subscriptions are due during the last month of the term covered by the previous payment, and unless notified to the contrary, the fact that the subscriber continues to accept delivery of the journal, is taken as proof that continuation of the subscription is desired, and we will continue to send regularly until notified in writing or copies are returned through the post.

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Changes of copy for advertisements must be in our hands on or before the 12th of the month prior to publication.

Readers are asked to make their purchases from our advertisers, who cover all lines of interest to orchardists, at the same time mentioning this journal. By so doing, the grower, the advertiser, and this paper will benefit.

Every care is taken to publish advertisements from reliable houses only, and to see that advertisements of an undesirable nature are not published. The management reserve the right to refuse to publish any announcements that they may regard as undesirable, either from the point of view of the goods offered or in the wording of the advertisement notwithstanding the fact that a contract may have been entered into for the use of a certain space.

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Tasmanian Director:

Hon. L. SHOOBRIDGE, M.L.C.

EXAMINATION "BULLS."

The following "bulls" were discovered in the examination papers of some particularly bright scholars at recent exams.:

A grass widow is the wife of a dead vegetarian.

Psyche was a black boxer who fought Carpenter.

One of the chief uses of water is to save people from drowning in.

No one has yet succeeded in edifying the dark lady of the sonnets.

Mephistopheles was a Greek comic poet.

Algebraical symbols are used when you don't know what you are talking about.

A deacon is the lowest kind of Christian.

Geometry teaches us how to bi-sex angels.

The press to-day is the mouth-organ of the people.

Mistress: "When I engaged you, Jane, you told me you had no men friends. Now, nearly every evening when I come into the kitchen, I find a man here."

Jane: "Bless you, mum, 'e ain't no friend o' mine!"

Mistress: "Good gracious! Who is he, then?"

Jane: "He's my 'usband."

Precooling Soft Fruit for Interstate Trade.

Important Development in Fruit Marketing.

Pre-cooled Peaches Realise from 50 to 100 per cent. Increased Prices in Sydney.

"A New Era of Prosperity has Dawned."

ONE OF THE MOST IMPORTANT advances—if not the most important—in interstate fruit marketing of soft fruits, is now announced.

This is the precooling of Peaches and other soft fruit before despatch. By this means Goulburn Valley fruit can be sent to Sydney—and re-shipped to distant towns—in perfect condition, thus a new era of prosperity has dawned for the growers of this class of fruit.

The precooling system has been carried out over two seasons. It has been tested out commercially. Mr. D. G. Wills, the official market representative in Sydney of the Northern Victorian Fruitgrowers' Association, is in a position to announce positively that the right methods have been demonstrated, and it only remains for the growers to take advantage of all the benefits that are offering.

Here are the results of two tests among many.

Hale's Early Peaches.

100 cases precooled brought 12/- to 14/- (average 13/-) in Sydney.

25 cases, same variety, sent same day, unprecooled, 6/-.

The increased value was over 100 per cent.

700 cases of Pullars Cling Peaches—unsuitable for processing, and cooled stored for three weeks, were sent to Sydney, and realised 8/- to 10/- per case. If carried under ordinary conditions, this lot would have arrived wasty and realised from 4/- to 5/- per case.

While these experiments have been going on, very little, if any, publicity was given.

But after the precooling method had been proved to the satisfaction of expert growers, Victorian Agricultural Departmental officers, railway men, fruit merchants and buyers, it remained for Mr. Wills to make the announcement at a meeting of the Northern Victorian Fruitgrowers' Association, the Shepparton Irrigators' Association, and the Ardmona Fruitgrowers' Association.

Precooling is Important.

By precooling the fruit and using cooled trucks, a perfectly satisfactory system of fruit carriage over Australian railways has been evolved.

The cool store of the Ardmona Cannery, at the Mooropna railway station, used for this purpose has proved its value, apart from canning purposes.

The system of precooling may be summarised thus:—

- (1) Holding the Peaches or other soft fruit in a cold store from 48 hours to three weeks. (Clings can be cold stored for six weeks if necessary.)
- (2) Despatch in cool trucks to Albury.
- (3) Transfer from cool trucks at Albury into louvered vans for Sydney. In the journey from Albury to Sydney, half of the time the travelling is during the night. It would perhaps be advisable to use cool trucks for week-end consignments.

Some Outstanding Advantages.

Here are some of the important new aspects of marketing soft fruit, which have been brought to light because of the fruit being precooled.

1. Precooling will enable Sydney traders to hold the fruit in a condition in which it will keep four or five days if necessary on the open market—or it can be further stored if desired. This does away with forced sales because of having a rapidly wasting article.

2. By reason of the keeping qualities of the fruit the market will be greatly widened; the fruit can be re-consigned to interior towns 500 miles distant.

3. Should adverse weather lessen the demand, the fruit can be held in cool store in Victoria ready for shipment until advised by the growers' market representative, thus regulating prices.

4. Buyers will operate with confidence, knowing that wastage is reduced to a minimum, and that they can effect steady clearance.

5. The housewife will buy with confidence because of the increased life of the fruit.

6. By precooling, the destructive transit rot has been largely eliminated; this has been demonstrated by Government experts, apart from actual practice in transport.

7. Soft varieties of Peaches, Apricots, Plums, etc., which previously could not confidently be sent to Sydney, can now be marketed under precooling conditions. Peach varieties which can now be marketed with confidence, include:—Hales, High's Early, Brigg's, etc. Elbertas can be left till tree ripe; when precooled they can be marketed, and it is a choice variety in this condition.

8. Clingstone varieties can be cool stored and then satisfactorily marketed in Sydney, Nicholls Orange Cling, not now in demand for canning, is quite satisfactory for precooling and marketing fresh, being marketed in Sydney when other varieties are not available.

The costs work out at 6d. to 7d. per case above the expenses when not precooled, at weekends, 1/2 per case. But it is money well spent when the returns are from 50 to 100 per cent. in advance of the prices under the old system.

Because of the fruit arriving firm and in a condition to hold up for several days the growers' Sydney market representative will be in a position (in conjunction with the agents) to exercise his judgment and discrimination in placing the fruit in the market or withholding for more favorable conditions.

Before the effectiveness of the precooling system had been demonstrated, the sending of Peaches and other soft fruit to Sydney was a risky business often involving the grower in great loss.

Precooling enables the fruit to be marketed in a firm and choice condition, and thus solves the major portion of the difficulties of obtaining profitable returns to growers when consigning to Sydney market.

Cool Stores for Shepparton.

Because of the new opportunities for marketing Peaches and other soft fruit under the precooling system, Shepparton growers are considering the matter of remodelling the old Shepparton Freezing Works and making them suitable for holding fruit.

What America is Doing.

It might be stated that the precooling of fruit for rail transport is no new thing. It has been practised in the United States for 20 years past. Not only is the fruit precooled before railage wherever possible, but iced cars are used for transit.

So far iced cars for fruit have not been largely used in Australia because of the lack of demand for this class of haulage.

A Well-known Grower's Views.

Mr. Victor R. McNab, Chairman of Directors, Ardmona

Fruit Products Co., writes as follows with regard to pre-cooling:—"All Goulburn Valley fruitgrowers suffer reduced prices when marketing normal crops, due to the increased deliveries during the main picking of each variety of Peach. Precooling offers the only possible solution and enables each grower to deliver his fruit to the market on the best selling days over a longer period, and, what is more vital, in a firm, sound condition, so that the buyer can keep it longer or despatch it away to distant towns without loss."

Opinion of Sydney Merchant.

Mr. E. Johns, Managing-director of the Australian Fruit and Produce Co. Ltd., Sydney, when interviewed on the subject of precooling Peaches and soft fruit before despatch to Sydney, speaks emphatically in its favor.

"Precooling marks a new era in fruit marketing," states Mr. Johns. "There is, in fact, no need to ask the

people to 'eat more fruit' when your choice early Peaches are offering. The difficulty in the past has been to get them to us, for such fruit sells itself. Now, by precooling you can use this choice fruit just at the time the Sydney market is starving for it.

"Then again, as regards the marketing of your Peaches and soft fruit generally. Under the precooling system it arrives firm and choice, and no longer is the salesman compelled to take the first offer that comes along,—afraid that otherwise he will have to pay the fee necessary for the fruit to be taken to the tip.

"I say with absolute confidence, after a lifetime's experience in the fruit business, that the system of precooling Peaches and soft fruit before rail transport, is the biggest thing that has so far been brought to light for developing the industry."

EDITORIAL.

ANOTHER YEAR is waning. We take this opportunity of sending the happy season's greetings to our readers.

The year 1929 has seen substantial progress in several branches of the fruit industry. Each section is tackling its individual problem in a fine spirit—a spirit worthy of the pioneers who are developing this fertile island continent of Australia.

We need a wide vision and a large faith. We are all conscious of mistakes, yet sweet are the uses of adversity. If we profit by our mistakes and use them as guide-marks from avoiding similar errors in future, the experience will not have been in vain. Our successes, too, are but finger-posts directing us to yet further advancement. We are still evolving in our personal and national life.

The fruit industry is of very great importance in the development of Australia. It is to be hoped that all engaged in the industry will find a profitable outlet for their energies. In a contented and prosperous rural population lies the real solution of Australia's many problems.

The "Fruit World" is at the service of growers in every effort to advance the industry. The Editor and staff wish their numerous readers individually and collectively a happy Christmas and a prosperous New Year.

Cherry Trees From Japan.

While appreciating the offer of flowering Cherry trees from our courteous Japanese neighbors, we trust the gift will be respectfully declined. The embargo against the importation of such trees has been in force for many years. Such an embargo was not lightly imposed. It is fully justifiable. The danger from imported

pests and diseases is too great to run the risk.

It is in keeping with the friendly spirit of our Japanese friends that they should have notified the authorities that if the embargo is to remain in force they will not take offence because their generous gift could not be accepted.

Pre-cooling Soft Fruits.

The article in this issue regarding the pre-cooling of Peaches and soft fruits for interstate trade, is full of interest. This subject has created great attention amongst growers generally.

Pre-cooling of soft fruit and the use of iced cars has long been in vogue in the United States. Now, however, adequate tests have been made with Peaches and soft fruits cold stored in the Goulburn Valley and successfully railed to Sydney, thus providing a greatly enlarged outlet for these choice fruits.

The fact that the destructive transit rot is practically eliminated, is a matter for great satisfaction. All this is very heartening to growers of soft fruit in the Goulburn Valley and elsewhere, and further developments can be expected.

Cold storage came as a stabilising factor in to the hard fruits industry. It is now proving its worth in relation to soft fruits.

Softwood Cases.

Fruitgrowers, exporters, and all connected with the industry, are taking prompt action to combat the activities of the Sawmillers' Association regarding the softwood timber question. Sawmillers are bringing pressure to bear on the Commonwealth Government to have the duty on softwoods increased and to have the drawback on re-export cancelled.

Australia is steadily improving her pack of export fruit, and the use of the softwood case is yearly becoming

more general. These neat white cases are used exclusively in the United States, Canada, South Africa, and New Zealand. For Apples, the "Canadian" standard box is favored.

It would set the hands of progress back if Australia is not permitted to use the softwood container of similar appearance to those used by competitors.

It is to be hoped that the Minister for Customs, Mr. Fenton, will catch the larger vision and see to it that no obstacles are placed in the way of the development of a primary exporting industry.

PERSONAL.

We were sorry to hear of the illness of Mr. H. S. Taylor, Editor of the "Murray Pioneer" and the "Australian Dried Fruit News." Mr. Taylor has not been in good health for the past few months, and on the advice of his physician will remain in hospital for some weeks. We trust Mr. Taylor will speedily recover, and that he will soon be at work with his usual vigor on behalf of the fruit industry.

Mr. H. Broadfoot, Senior Fruit Instructor, N.S.W. Department of Agriculture, has been selected to accompany a special shipment of Apples and Pears to Hull on the "s.s. Banffshire," sailing from Sydney on March 20.

Mr. E. N. Seary and Mr. H. W. Showell, both prominent in the Australian dried fruits industry, are enjoying a big experience in California. They were shown every courtesy by the Sun Maid Association, as well as independent packers. Writing in the "Murray Pioneer," Mr. Seary reports on the improvement in the Californian Raisin situation. For new crop, Thompson growers are receiving 4½ cents per lb. The balance of the 1928 carry-over was sold, and the crop this year was expected to pack out at 225,000 tons.

Removal of Spray Residue from Apples and Pears.

Experiences in South Africa in the 1929 Season.

(By F. W. Petty, Ph.D., Senior Entomologist, Division of Plant Industry, South Africa.)

MUCH DISCUSSION is taking place in Australia and New Zealand regarding the vexed subject of spray residue on Apples and Pears. As enquiries are being made by growers with regard to the necessary equipment should it be found necessary to wash the fruit to remove the spray residue, the following information just to hand from South Africa will be found particularly helpful.

Working in conjunction with the Stellenbosch-Elsenburg College of Agriculture of the University of Stellenbosch, Mr. F. W. Petty, Ph.D., Senior Entomologist of the Division of Plant Industry, South Africa, has issued Bulletin No. 63, which reads as follows:—

THE SOUTH AFRICAN GOVERNMENT REGULATIONS for 1929 require that no fruit showing visible spray stains shall be allowed to be exported, nor shall the export be permitted of any consignment of fruit, samples of which, upon analysis, are shown to contain more than one-hundredth of a grain of arsenic (As₂O₃) per pound of fruit, whether or not spray stains be visible on such fruit.

Cleaning Methods.

Wiping or brushing is not a suitable method for removing spray residue from fruit, and cannot be recommended. Chemical washing or dipping of fruit is satisfactory. Of the various chemical liquids tested, a one-half to one per cent. solution of actual hydrochloric acid is the most effective and practical in which to dip Pears or with which to spray Pears or Apples by machinery for the removal of spray stains.

Equipment for Cleansing Fruit.

A diagram of a simple, practical and economical equipment for treating Pears and Apples in a weak solution of hydrochloric acid is shown in figure 1. It consists of two wooden troughs, one for holding acid and the other for water, placed end to end, with one sloping draining shelf between each, and another at the end of the water trough.

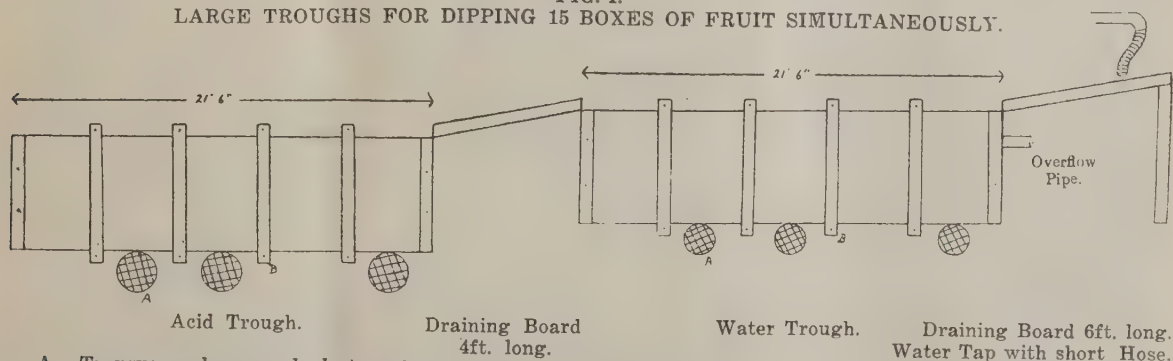
The troughs may be made of boards one and a half to two inches thick and should be about 20 inches deep (inside measurements). At intervals of not more than 5 feet, and at the ends of each trough there should be outside battens. The top and bottom of each batten should be braced

with a transverse bolt, one extending across the top of and one underneath the trough. At the ends of the troughs it would be advisable to have bolts at the corners outside extending from the top to the bottom from transverse battens. The battens, and pitch or tar used between the joints or boards should prevent leakage.

The large grower, who desires to pack 1,500 to 5,000 trays per day, should have each trough large enough to easily accommodate 12 to 15 boxes in a single row, side by side. It is probably advisable for growers treating a few hundred boxes to have troughs built large enough to accommodate at least six boxes of fruit simultaneously. Then the time of the laborers who dip the fruit may be fully occupied. Small fruitgrowers, who desire to treat only a few dozen bushels per day, may find split cane bushel baskets more suitable than boxes and wooden tubs, or vats more desirable than wooden troughs. Baskets, however, will soon wear out, and are impractical for the large grower.

The fruit may be dipped in the same boxes as those in which it is harvested, but there should be at least a quarter of an inch of space between the bottom boards and sides

FIG. 1.
LARGE TROUGHS FOR DIPPING 15 BOXES OF FRUIT SIMULTANEOUSLY.



A.—Transverse log or plank to raise trough from ground.
B.—Batten to strengthen trough. One transverse bolt connects the batten of one side with that of the opposite side of the trough both at the top and at the bottom.

The troughs should be a little wider (inside measurements) than the length of the boxes in which the fruit is to be dipped, and about a foot longer (inside measurements) than the combined length of the number

of boxes of fruit placed side by side (not end to end) which it is desired to dip simultaneously. The boxes of fruit are pushed or floated through the troughs side by side, not ended to

end. Some growers may desire to dip their fruit in lug boxes, others in Apple boxes, and others in trays, etc. The dimensions of the troughs should be determined accordingly.

to allow rapid drainage of the acid solution. Metal ribbon and nails of the boxes will not appreciably affect or be affected by the acid solution.

Only the minimum amount of wood wool required to prevent bruising and abrasion of skin is advised for boxes to avoid rapid accumulation of acid in the rinse water.

If Apples are to be dipped it is advisable, in order to insure submergence of the upper layer of fruit in each box, to have two horizontal planks, their narrow sides parallel with the surface of the liquid, and so spaced as to allow the boxes of fruit to be shoved down under them and along in the trough, fitted in each trough and securely fastened to the sides of the trough by transverse planks. (See figure 2.) Each box of Apples to be dipped must have a loose-fitting cover (like a boot box cover) to prevent the floating out of the Apples. Pears do not require covers on boxes nor the planks in troughs as most of them are too heavy to float.

The drainage shelf between the troughs should be long enough to accommodate half as many boxes of fruit as are being dipped simultaneously, and the water trough should be raised a few inches higher than the acid trough to allow the acid solution draining from the boxes to flow back into the acid trough.

Each box of fruit is placed in the acid solution trough at the end opposite the draining shelf and pushed down deep enough in the liquid to wet the upper layer of fruit. The boxes are pushed along to make room for others as they are added. After one to two minutes of exposure to the one per cent. actual acid solution (or 3 minutes to $\frac{1}{2}$ per cent. actual acid), the length of submergence in the acid depending on the amount of arsenate on the fruit, the end boxes first put in are lifted out on the draining shelf, and are allowed to drain $\frac{1}{2}$ to 1 minute, and then they are placed in the water trough, care being taken to occasionally fully submerge the upper layers of fruit. Meanwhile the boxes in each trough are pushed along and additional boxes of fruit are placed in the trough.

The water or rinse trough should receive a constant stream of water, the flow amounting to at least four gallons per minute in fairly large troughs. Each box of fruit should remain in the water trough one to two minutes, after which each should be placed on the water draining shelf and receive a thorough drenching of fresh water for about 15 seconds from

a short hose attached to a nearby tap. This final drenching of each box of fruit with clean water is absolutely necessary to prevent acid injury to the fruit from contamination of the water by acid which tends to accumulate in the water trough, and later in the wood wool or even in some boards of the boxes if drenching is not practised. Troughs should be supplied with a plug or spigot located at or near the bottom to facilitate draining and cleaning them.

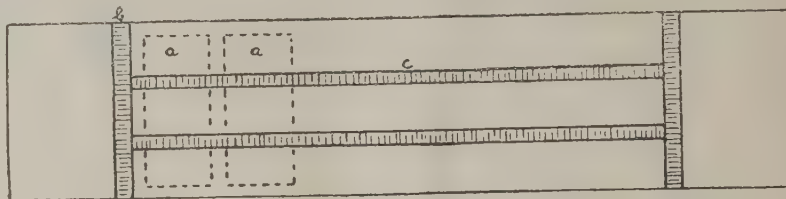


FIG. II.

TOP VIEW (looking from above down) OF ACID TROUGH FOR SUBMERGING APPLES.

a.—Box of Apples pushed under horizontal plank or boards of acid trough.

b.—Transverse plank attached firmly to sides of trough.

c.—Horizontal plank attached to transverse plank.

Strength of Acid Solution and Period of Submergence of Fruit.

Fruitgrowers may dip their fruit either in one-half or one per cent. actual hydrochloric acid. The use of one-half per cent. acid is more economical, but it requires a longer period of submergence of fruit, and is less suitable for very heavily sprayed fruit.

With few exceptions treatment of Pears that have received a normal spray programme of arsenate of lead for one to two minutes in a one per cent. acid solution, or three minutes in one-half per cent. acid, followed by draining a half-minute and rinsing one minute will effectively remove practically all visible traces of arsenate from most varieties without causing injury.

Late-maturing, very heavily sprayed Pears and Apples may require treatment for three minutes in one per cent. acid or five minutes in one-half per cent. acid. Fortunately late varieties are less susceptible to acid injury than early varieties. Pears particularly should not be harvested until they are mature. Somewhat immature Williams and Louise Bonne Pears will endure no more than one minute in one per cent. acid solution without damage, and the first picking of these varieties, especially "choice," should not be submerged longer than this period.

The maximum safe period of submergence for mature early and mid-summer ripening Pears is two minutes in one per cent., and three minutes in one half per cent. actual hydrochloric acid; for late maturing Pears the maximum safe period is three minutes in one per cent. and 5 minutes in one-half per cent. actual acid. The temperature of the solution should be from 70 to 80 degrees F.

Fruitgrowers are advised not to dip fruit in a stronger solution than one per cent. actual acid, and especially not to submerge the fruit of any variety longer than is necessary to remove visible traces of spray residue.

An abundance of rinsing water and a final thorough drenching of each box of fruit with clean water as the box is removed from the water trough cannot be too greatly emphasised.

When Water Supply is Limited.

If the rinse water supply is limited and it has to be used over and over again the fruit should be dipped in one-half per cent. and not in one per cent. acid, and the addition of bicarbonate of soda to the rinse water will be found useful.

When still (non-running) water is used in the trough, 200 gallons of clean water are required to rinse every 50 bushels of fruit after they have been dipped in one per cent. acid and drained a half minute, but only 100 gallons are required to rinse 50 bushels when one-half per cent. acid is used. Dipping a greater amount of fruit in this quantity of water under these conditions will result in an accumulation of a dangerous amount of acid, consequently the used water must then be replenished by fresh clean

water. When bicarbonate of soda is added to the water at the rate of 1½ lb. in every 100 gallons only half as much water is required to rinse 50 bushels of Pears after treatment with acid. Bicarbonate of soda should prove useful when the water supply is limited.

How Removal of Arsenate May be Facilitated.

Fruit, particularly Apples, should be treated for removal of spray residue immediately after it is harvested to avoid accumulation of wax and consequent difficulty in the effective removal of the arsenate.

Growers who experience difficulty in removal of spray residue from any variety will find that the addition of 2 lb. of freshly slaked lime or hydrated lime to every 80 gallons of lead arsenate spray in the spray tank during the last two spray applications put on the trees will facilitate the removal of the arsenate from the fruit when harvested. Arsenate is sometimes difficult to remove from Louise Bonne Pears grown in inland districts and from some varieties of Apples. The lime should be slaked in or mixed with water and then the lime water should be poured into the spray tank through a sieve or hessian bag.

Dilution of Acid.

Ordinarily commercial hydrochloric acid, which is suitable and the cheapest, contains 30 per cent. actual acid. To prepare a one per cent. acid solution, place 32 gallons of water in the acid trough and add to it one gallon (two Winchester quarts) of 30 per cent. actual acid. To make a half per cent. solution 64 gallons of water are required for every gallon of 30 per cent. acid.

Replenishing Acid Solution.

In practice the strength of the acid solution in the acid trough generally changes very little during the season. As dipping of the fruit proceeds, the volume of acid solution in the trough will be decreased, necessitating occasional addition of more solution of the proper concentration of acid.

Water troughs should be cleaned out rather frequently to prevent accumulation of rot-producing spores or fungi, but for the treatment of Pears it is not usually necessary to dump out the acid solution and replace it with clean solution more than once every few weeks, or when it becomes very dirty.

Apples Require Special Treatment.

When Apples and Pears, which have been sprayed with lead arsenate, are dipped in acid solution the arsenate becomes soluble and this soluble

arsenic accumulates in the acid solution and in the rinse water. Apples, particularly some varieties, are more subject to damage from the accumulation of soluble arsenic in the acid and water troughs than Pears.

A certain percentage, sometimes considerable, of Cleopatra, Jonathan, W. W. Permain, Spitzenburg, Gravenstein, Delicious, and Ortley Apples have open cores or calyx tubes extending down into the core, while Grimes, Wine Sap, Newtown and Rome Beauty have closed cores.

It is impossible to sort out the Apples with open calyx tubes. Those which appear to be most open are often found to be closed completely when cut in half. The percentage of open calyx tubes is greater in large Apples than in small ones. It is greater in Apples produced on young trees. The percentage varies in different orchards and in different localities.

The percentage of open calyx tubes in other varieties not mentioned above and commonly grown in South Africa, e.g., Ohinemuri, Versveld, Cox Orange Pippin, etc., is not known.

Care should be taken to avoid as much as possible deep submergence in acid solution of those varieties which have open calyx tubes, since deep submergence forces the acid solution into the core and core rot or core damage results.

The grower can determine whether the percentage of open calyx tube in a variety is appreciable or not by cutting in halves through the stem calyx axis about 100 Apples obtained from several trees, some of large size and some of small size.

Jonathans are particularly susceptible to damage from soluble arsenic if the latter is allowed to accumulate in the acid trough or rinse water.

Soluble arsenic injury of the calyx consists of blackening of the calyx and surrounding skin which becomes sunken. Acid injury of core and calyx consists of the tissues turning brown. To avoid acid injury (core injury) and soluble arsenic injury:—

(1) Dip Apples in no stronger solution than one-half per cent. actual hydrochloric acid.

(2) Expose Apples to the acid solution the minimum effective period of time necessary to remove visible arsenate.

(3) Avoid driving the acid deeply into the calyx by using shallow submersion, i.e., dip the fruit in shallow boxes (half size Apple boxes of no more than three layers) and no deeper than is sufficient to wet the upper layer of fruit. A power wash-

ing machine applying the acid solution to the fruit in a fan-shaped spray, such as the Bean and New Cutler, is preferable to dipping of Apples when available. Machines treating 400 bushels per day can be supplied now. Their cost, without drier, is about \$120, landed. This type of machine using one-half per cent. acid, will effectively remove spray residue from the fruit in a half minute, and it avoids all possibility of core injury to Apples when calyx tubes are open.

(4) After 200 gallons of acid solution have been used for cleaning about 1,200 bushels of Apples the acid solution should be thrown away and be replaced by fresh, clean one-half per cent. acid solution, but before refilling, the trough should be well washed and scrubbed with clean water, or one per cent. solution of formalin where available.

(5) Use a plentiful supply of rinsing water in the water trough and be sure to have every box of Apples well drenched with clean water just after it is taken from the water trough—by means of a short hose attached to a tap at the end of the water trough.

(6) Particularly if there is a limited supply of water a third trough containing lime water (2 lb. of hydrated or slaked lime in 80 gallons water) should be provided in which each box of fruit should be dipped for 15 seconds or more just after it is rinsed with water. No further rinsing should follow dipping in the lime water. This avoids injury from soluble arsenic as it makes the soluble arsenic insoluble. Bicarbonate of soda is not suitable for this purpose.

Pears do not require the precautions that Apples demand, and the former may be deeply submerged in bushel boxes. However, it is important to avoid dipping Pears in one-half per cent. solution longer than three to four minutes or in one per cent. solution longer than two minutes, drain one-half minute and dip in water one to two minutes. Late maturing varieties will, however, endure three minutes in one per cent. and five in one-half per cent. without injury.

It is equally important to drench each box of Pears with absolutely clean water after being removed from the rinse trough, and an abundant supply of clean water is very desirable for the rinse trough. Lime water for Pears should be avoided, unless there is a shortage of water, in which case a rinse in water should follow.

Apples may be exposed to one-half per cent. acid for five to ten minutes, but the longer they are exposed to the acid the more likely calyx or core injury will occur when fruit has

open calyx tubes; drain one half-minute and rinse one to two minutes in water, followed by drench a few seconds and then dip in lime water.

Apples having a certain percentage of open calyx tubes should be graded before treatment and only those for export should for the present be treated for removal of arsenate.

Clean Pears that Are to be Dried.

All Pears, whether for export or not, should be dipped, particularly if they are to be dried.

The Necessity for Drying Fruit Before it is Packed.

The more thoroughly fruit is cleaned of spray residue and rinsed in or drenched with fresh clean water, the less necessary it is to dry it before it is packed. Apples and Pears should be packed wet rather than be allowed to stand for hours to dry by means of evaporation. But the packer may to advantage give each fruit a quick single shake before wrapping. The paper quickly absorbs the moisture on the fruit and prevents concentration of either acid or soluble arsenic by evaporation in the contaminated water that may be standing in drops on the fruit. The wrapping paper soon dries, particularly when fruit is packed in trays.

Precautions.

Follow strictly the directions for making the acid solution. Always carefully measure both acid and water. Supervise carefully and constantly the dipping of the fruit and the making of the solution. Dip each box of fruit in the water immediately after it has drained about a half-minute, and see that the upper layer of fruit in each box is fully submerged in the water. Be certain to drench each box of fruit with clean water, free of all acid, after it is lifted from the water trough. Commercial 30 per cent. acid destroys clothing rapidly and burns the skin. Laborers may protect clothing from acid solution during dipping by wearing grain sacks, etc. Ordinarily it is unnecessary for natives to protect their hands from one-half to one per cent. acid solution.

(Note.—Recent experience in Oregon, according to Hartman, and experience by the writer with Cleopatras and Permains, show that dipping to a depth of 6 to 8 inches results in some penetration of acid solution into the core of Apples having open calyx tubes, and that core injury to such Apples can be completely avoided only by floating such Apples in the acid solution in a single layer or by the use of a machine which sprays the acid solution on the fruit.)

REMOVAL OF SPRAY RESIDUE FROM APPLES AND PEARS.

Experience in U.S.A.

VALUABLE EXPERIMENTS in the removal of spray residue from Apples and Pears have been conducted by the U.S.A. Department of Agriculture through its officers at Wenatchee, a large Apple growing section of the State of Washington on the U.S. Pacific Coast.

In a report recently issue by the U.S.A. Department of Agriculture on this subject, the following are dealt with:—General aspects of spray-residue removal; cleaning fruit by wiping or brushing; dry-cleaning apparatus, limitations of dry-cleaning methods, cleaning fruit by solvent methods, i.e., diffused-spray washer, forceful-jet spray washer, flood washer, flotation, combination of overhead diffused spray and flotation; tank dipping in boxes; deep submersion; alkaline-solution washer; influence of temperature on effectiveness of solution; adjustment and care of equipment; methods of rinsing; methods of drying; apparatus and methods for determining acidity; effect of cleaning methods on keeping quality; arsenical injury; hydrochloric-acid burning; chemical injury at the core; rot-producing spores and moisture.

It is pointed out that with proper operation of suitable equipment, both Apples and Pears can be satisfactorily cleaned without serious injury to the fruit. Careless cleaning methods, however, may result in arsenical injury at the calyx or stem, hydrochloric-acid burning, or chemical injury at the core. Any of these injuries may open the way for storage rots.

The sooner the fruit is cleaned after it is picked, the more easily the cleaning can be done, and the less risk of damage there is to the fruit. In any event, fruit should be cleaned before it has passed the firm stage of maturity.

The method whereby warm alkaline solution was used was generally efficient with Apples. Usually a solution of soda ash of about 2 per cent. strength was used when the residue was not too difficult to remove. With heavily sprayed lots, the addition of caustic soda sufficient to make a 0.25 to 0.5 per cent. solution was also added. In the commercial use of this method during 1927, borax was also added to the cleaning solution, which was warmed to a temperature ranging from 80 degrees to 110 degrees F. Cleaning efficiency was greater at the higher temperature.

Since the alkaline solutions are solvents for the waxy materials on the surface of the Apples, considerable care must be exercised in making the solution strong enough to be an efficient cleaning agent, and yet not so caustic as to injure the fruit. A very thorough rinsing with an abundance of fresh water is also essential, since the alkaline materials are more difficult to wash off.

For Pears having russeted surfaces, the use of an alkaline washing solution, especially when caustic soda is added, is attended with some danger of injury to the skin of the fruit.

Hydrochloric-acid was also used successfully using three gallons of acid to 100 gallons of water. The report is signed by H. C. Diehl, Associate Physiologist, Office of Horticultural Crops and Diseases, D. F. Fisher, Senior Pathologist, Office of Horticultural Crops and Diseases, Bureau of Plant Industry, United States Department of Agriculture; Henry Hartman, Associate Horticulturist, Oregon Agricultural College Experiment Station; J. R. Magness, Horticulturist, State College of Washington Agricultural Experiment Station; and R. H. Robinson, Chemist, Oregon Agricultural Experiment Station.

The technical points involved are all most carefully dealt with in this valuable report.

TO HELP HOSPITALS.

Fruit and Flowers Desired.

FOR SEVERAL YEARS a very beautiful service has been rendered to hospitals by the Canterbury (Victoria) Horticultural Society.

By means of the Yellow Box system various hospitals are kept supplied with flowers. Those having flowers can apply for a Yellow Box, and on filling same with flowers or fruit, it is carried free on railways and delivered free to the hospital to which the box is addressed.

The Hon. Secretary of the Canterbury Horticultural Society is Mr. H. A. Howard, 13 Cross-street, Canterbury, Victoria, who will gladly supply information to all interested.

If any readers can send flowers or fruit to hospitals, all that is necessary is to write to Mr. Howard for a Yellow Box, and on this box coming to hand it can be filled and sent free of freight to any hospital desired, which is most cordially appreciated by the hospital authorities, patients and nurses.

This happy service is commended to our readers.

Australian Dried Fruits Conference

A Record Season: Local and Export Marketing.

**Restriction of Plantings Urged, also Elimination of Subnormal Vineyards
Conference Opposes an Increase of Duty on Case Timber.**

THE ANNUAL CONFERENCE of representatives of the dried fruits industry was held in Melbourne on November 6, 7, and 8. Delegates attended from Victoria, South Australia and New South Wales.

Mr. A. L. Johnstone, of Mildura, was appointed chairman.

The Late Mr. T. C. Rawlings.—A motion expressing regret at the death of, and appreciation of the services rendered to the industry by, Mr. T. C. Rawlings, was carried in silence by the meeting.

A Record Season.—A report by the Secretary disclosed that the 1929 crop of dried fruits was a record. The total of dried fruits produced was: 18,893 tons of Currants, 46,000 tons of Sultanas, and 6,951 tons of Lexias, a total of 71,844 tons. Of this crop, 91 per cent. was handled by the Association.

Marketing and Publicity.—Mr. H. D. Howie, Chairman of the Board of Management, submitted a report of the past year's operations of the board in respect to marketing, publicity, control and developing and improved packing methods. The report emphasised the increasing difficulty of successfully marketing the large Australian crop in competition with the producers of Smyrna, Greece, Spain and California, and indicated the necessity for continued organisation and control in Australia if the producers here were to continue operations.

Export Quotas.—Discussion took place on the question of inequitable export quotas of dried fruit, which is now operating in favor of the New South Wales growers. These growers were exporting only 50 per cent. of their Sultanas, although the growers in other States were now exporting 87 per cent., and were consequently securing higher returns for their fruit. This was resulting in an increase of the planted area in New South Wales, and greater difficulty in marketing problems. Growers in other States had become dissatisfied with the position, and delegates expressed themselves strongly in favor of action being taken that would result in equality of export.

A resolution was passed authorising the Board of Management to con-

tinue representations to the New South Wales State Board to secure a satisfactory adjustment of the export quota, and in the event of failure in their efforts to take such other action as might be deemed necessary.

Mr. Parker Moloney, Minister for Markets, accompanied by Mr. P. G. Stewart, M.P., attended the conference in the afternoon, and gave an address on organisation of primary producers. He promised sympathetic consideration of the problems of the dried fruit industry, particularly in regard to Imperial preference, the Canadian trade treaty, and the preparing of a preferential trading arrangement with New Zealand.

Mr. R. M. Eldridge, publicity officer of the Association, submitted his report in respect to organisation and publicity. The Association had appointed three representatives and purchased three display waggons to work Victoria, New South Wales and South Australia among retailers and bakers. The publicity work in this direction had proved very successful, and an extension of this publicity was decided upon.

Commonwealth Sales.—A long debate occurred on the agenda item relating to agents' Commonwealth sales, which dealt with the supply of unsold stocks in any one agent's hands to fill orders secured by another agent who had already contracted for the sale of his Commonwealth quota.

A motion for an increase of agents' commission from 1 per cent. to 2 per cent. was withdrawn, as was also an amendment that commission be reduced to $\frac{1}{2}$ per cent. on sales over the Commonwealth quota.

Second Day's Session.

Organisation Methods.—Recommendations were received from a committee on organisation that the organiser visit the weaker branches twice a year, and that members of the Board of Management or leading growers visit other branches once a year, with a view to improving the knowledge of growers on the problems of the industry. It was further recommended that the Association take steps to keep members of the Federal and State Parliaments better informed on the affairs of the industry.

Low-grade Fruit as Fodder.—South Australian delegates brought forward

a resolution that all fruit below one-crown grade in Currants and Sultanas and two-crown grade in Lexias be kept off the market, and that investigation be made to find an outlet for low-grade fruit as a fodder. It was explained that this position was brought about by the poor demand for low-grade fruit for distillation purposes. A report was submitted on experiments which had been carried out in denaturing fruit for fodder purposes.

Restriction of Plantings.—A constructive plan was brought before the Council, setting out a proposal to assist in stabilising the industry. The main features of the plan consisted of rigid restriction of further plantings and the elimination of sub-normal bearing land and its conversion to more profitable uses. A strong committee was formed to study the matter and to report to the Council.

Stone Fruits and Control.—A long discussion took place on the question of bringing stone fruits under control, and it was resolved that the Board of Management should take a plebiscite of branches to ascertain their wishes.

The Prune position was also discussed, and a committee was appointed to report to the conference.

James v. South Australian Dried Fruits Board.—News of the High Court's decision in the case of James versus the South Australian Dried Fruits Board was received with great satisfaction by the delegates. A commercial representative of the Commonwealth Export Control Board attended and gave an address on the Board's publicity operations in the United Kingdom, and delegates expressed high appreciation of the information of what was being done.

Victorian Dried Fruits Board.—Mr. J. M. Balfour, Chairman of the Victorian Dried Fruits Board, reported on the operations of the Board in all departments. The full details of the Board's activities in publicity were received with great satisfaction.

Senator R. D. Elliott briefly addressed the conference.

Cultural Practices.—Mr. A. V. Lyon gave further information on the dipping of vine fruits, sulphuring tree fruits, and grub infestation. The conference was assured that definite progress had been made towards eliminating grub troubles.

Third Day's Session.

Californian Experiences.—Mr. P. Malloch presented an exhaustive report on his recent visit to California. Some of his conclusions were that it would be almost impossible to reorganise the Californian industry in the next four years owing to the large percentage of foreigners, Racial and

language difficulties made organisation along the lines of the Australian Association practically out of the question. Production costs were 50 per cent. below Australian costs, and in harvest time seven days a week were worked.

Dried Stone Fruits.—The committee on stone fruits recommended:— (1) That in order to facilitate sales, packing regulations be amended to provide that all packers of tree fruits shall adopt a system of typing the fruit packed under the various grades to ensure uniformity of sample under each grade, different varieties of each fruit to be distinguished by separate type marks. (2) That the Board of Management consult with recognised authorities in the various States with a view to issuing to growers an authoritative statement on the methods to be adopted in sulphuring tree fruits to ensure a sulphur dioxide content within the Pure Foods Act.

The recommendations were adopted.

General Management.—On the question of appointing a general manager for the industry, the following resolution was passed:—

"That the appointment of a general manager is not at present practicable, but that it be a recommendation to the Board of Management that arrangements be made for the Chairman to devote more of his time to the affairs of the Association."

"Marginal" Vineyards.—The report of the special committee on the plan submitted by Nyah delegates for the excision of subnormal land was adopted. It stated that any action under the proposed plan was entirely dependent upon the restriction of further planting. The present position and prospects of the industry justified the claim that low-producing vineyards were unprofitable. The cost of settling growers in new lines of production should be borne by the State, as the repatriation policy financed by the States was responsible for the present unfortunate position.

Board of Management.—Four candidates were nominated for three vacancies on the Board of Management, Messrs. Howie, Malloch, Lawrence (retiring), and G. H. Badger. The ballot resulted in the election of Messrs. Howie, Malloch and Lawrence.

Case Timber: Increase of Duty Opposed.—The conference unanimously passed the following resolution:—

"This Council of dried fruits growers views with the greatest concern the requests made to the Minister for Customs by the timber interests for an increase in the duty on imported box shooks, and requests that no increase in duties

shall be made until the Association has been given the opportunity to place its views before the Minister. Our grounds for this request are that any increase in duties means an increased cost of production, and as this industry now has to export 80 per cent. of its production to world's markets it cannot bear any further increases in costs."

CALIFORNIA RAISIN-GROWERS.

Sunmaid Association Receives Credit Assistance of £1,800,000 From Federal Farm Board.

THE basis of assistance to the Sunmaid Raisin-growers' Association is given in a bulletin issued by the Commonwealth Department of Markets, this being an extract from the "Journal of Commerce," New York, as follows:—

IN line with its policy of aiding agriculture by strengthening farmer-controlled marketing organisations, the Federal Farm Board has agreed to extend substantial financial aid to California organisations engaged in the handling of Raisins.

The Federal Farm Board has undertaken, in co-operation with certain banks, to furnish the Sun-Maid Raisin Growers of California, one of U.S.A.'s oldest and largest co-operatives, a credit up to a maximum of 9,000,000 dollars, with which to make advances to farmers on their 1929 Raisin crop.

The Board has also agreed to aid the Sun-Maid Co-operative in such other ways as will insure to the Raisin-growers the undisturbed control of the valuable Sun-Maid trademarks, the modern and efficient plants, and the International Sales Organisation, which the Raisin-growers of California have built up over a long period of years as a part of their struggle to better conditions in their industry.

To Advance 3 Cents Per Pound.

The basic rate of the advance to be made by the Sunmaid Raisin-growers on Raisins will be 3 cents per pound, which is something more than double the amount advanced to growers last year.

The increased amount of this year's advance, the Board believes, is justified by the greatly improved statistical position of the Grape industry. For the first time since 1921 there is no carry-over of consequence, and there has been a steadily increasing consumption of Raisins under the Sunmaid's merchandising methods,

The relatively large advance is also made possible by improved conditions within Sunmaid as a marketing agency.

These advances will permit Sunmaid to operate Raisin pools for its own membership, and also under proper terms to operate annual pools for those Raisin-growers who are not members of the organisation. Sharp reductions in costs during the past year lead the Board to believe that Sunmaid can operate on behalf of its producer owners and other Raisin-growers as efficiently as its commercial competitors.

The entire programme outlined above has been put into effect to cover the immediate necessities and the movement of this year's crop, and the Board is continuing its investigation of the entire industry with reference to its requirements for a permanent programme.

* * *

From recent advices, it is stated that Californian growers can make a living if receiving 55 dollars (£11) to 60 dollars (£12) per ton for dried fruit.

DRIED FRUITS CONTROL.

Debate in Western Australian Parliament.

DURING the debate on the second reading of the Dried Fruits Continuance Act, opposing views were expressed by members of Parliament in Western Australia.

Mr. Millingdon said growers had done exceptionally well under control. Some growers were previously opposed to the Bill, but now 100 per cent. were in favor of control.

Sir James Mitchell (Leader of the Opposition) said that while he would not oppose the second reading of the Bill, he was perfectly certain it was wrong. We were heading for disaster. It was doubtful legislation, artificially increasing prices and placing a burden on consumers that producers might live. When we got wiser we would look deeper for a way of benefiting producers. Costs of production should be reduced. Growers were now getting a little of their own back at the expense of the people, who were paying through the nose to the Federal Government as a result of the tariff.

Mr. R. S. Sampson (Nat. Swan), said he was definitely in favor of the Bill. Consumers would be worse without the Bill, which had kept producers on the land.

Mr. Davy (Nat., Perth), in opposing the Bill, said it was the most perfect piece of legislative futility ever submitted to a Parliament. Its object was to compel citizens to support an industry that could not support itself.

Mr. Thomson (Leader of the Country Party) said that while he did not favor legislation of this kind, the industry was in such a state that unless some form of control were imposed, men would leave their holdings. He admired the work of the Dried Fruits Board, but it had a difficult task. Reduction of the packing sheds to two and a publicity campaign to increase consumption would place the industry in a better position.

The motion for the second reading was agreed to.

SOUTH AUSTRALIAN DRIED FRUITS BILL.

An Act, authorising the control of dried fruits, has been passed in the South Australian Parliament. The period is for five years; the Act differs in some details from the previous Act. In the Upper House the Bill was put through only in the face of strong opposition.

ADVERTISING DRIED FRUITS.

Interesting details of the publicity campaign of the Victorian Dried Fruits Board were recently given by Mr. J. M. Balfour. The programme includes hoarding displays, recipe books and leaflets, show-cards and shop window displays. The Railway Department was giving valued assistance.

* * *

By means of "publicity cars," the Australian Dried Fruits Association is carrying on valuable publicity work. These cars are in charge of Messrs. A. E. Hammett, A. MacKinnon, and L. B. Marchant, and are taken to country towns and centres of population. Grocers are furnished with window displays; bakers are encouraged to use the many tested dried fruit recipes, and recipe books are distributed to the public.

Mr. Peter Malloch, Manager of the Irymple Packing Co. Pty. Ltd., gave a valued address before the recent Australian Dried Fruits Conference. It has been decided to give this paper wide publicity.

DRIED FRUITS ACTION.

Plaintiff Sues South Australian Minister for £35,734, But is Unsuccessful.

Case May Go Farther.

Frederick Alexander James, fruit-grower, of Berri, South Australia, recently sued the South Australian Minister for Agriculture (Mr. Cowan) and the Dried Fruits Board of South Australia for £35,734 damages, said to have been occasioned by the seizure of dried fruits owned by James.

Mr. Justice Starke, in the High Court, found in favor of the defendants, and in doing so said that section 28 of the Dried Fruits Act gave the Minister the power (subject to section 92 of the Constitution) to purchase or acquire compulsorily any dried fruits grown in South Australia. It appeared to him that the acquisitions had been lawfully made. As the case might go farther, however, and in case it was then held that plaintiff's rights had been infringed, he would assess the damages at £12,145.

It is reported that Mr. James is appealing to a higher Court.

AUSTRALIAN DRIED FRUIT OVERSEA SALES.

Dried fruit valued at £30,150 was recorded as sold in Great Britain for the week ending November 14, comprising 829 tons. This included 711 tons Sultanas, averaging £36/0/10 per ton, 90 tons Currants at £39/16/8, and 28 tons Lexias at £33/6/10. The market continues quiet, and is affected by arrivals of and quotations for Turkish Sultanas.

Total overseas sales to date are shown in the following table:—

	Tons.
Great Britain	28,353
Canada and U.S.A.	4,480
New Zealand	1,928
South Africa	261
The East	533
	35,555

Allowing for home consumption in Australia, the quantity unsold is now estimated at 23,000 tons, including approximately 19,000 tons afloat for or held in store at British ports.

AUSTRALIAN DRIED FRUITS.

Sales in Great Britain.

For the week ending November 21 sales of Australian dried fruit in Great Britain were 1,077 tons, valued at £38,600. Details are:—801 tons Sultanas at £36/9/11 per ton, 116 tons Currants at £39/19/-, and 160

tons Lexias at £30/0/6. The market continues without change. Shipments to date are 46,789 tons, and sales 29,307 tons.

MARKETING DIFFICULTIES.

Mr. J. M. Balfour, Chairman of the Victorian Dried Fruits Board, stated recently in Adelaide that the average price in the United Kingdom for Australian Sultanas was about £43 per ton: after having deducted expenses for processing and marketing, this price would not give the grower his costs of production, unless on a 2-ton per acre yield: many growers did not produce much more than one ton per acre. Difficulties of marketing were very great, and the time had come for a careful survey of the industry.

DRIED APRICOTS FOR CANADA.

Mr. R. A. Haynes, commercial representative of the Commonwealth Government in Canada, reports that there should be a good future for Australian dried Apricots in Canada, particularly in the prairie provinces centreing on Winnipeg. As Australia enjoys a good preference, the trade is worth cultivating. Australian fruit pays 10 per cent. duty, foreign countries 25 per cent. There is a limited sale for Apricot kernels.

The Port of Hull.—Hull as a port for the receipt of fruit and commodities from Australia is gaining in importance. Hull is now the third port in the United Kingdom, and buyers attend from all parts of England, Scotland, and the Continent. There are regular sailings from Continental ports, thus providing good opportunities for the re-export of Empire fruit.

There are eleven modern docks, which are entirely owned and managed by the London and North-Eastern Railway Company.

Full information is obtainable from Messrs. Burns, Philp & Co. Ltd., 7 Bridge-street, Sydney, and branches. New Zealand: Messrs. J. A. Redpath & Sons Ltd., Christchurch, and branches.

PERSONAL.

Mr. H. G. Colombie, who has for five years been located in Australia, representing British and Continental fruit brokers, is leaving for Europe in February, and will remain overseas during the whole of the Australian selling period, to supervise the sale of fruit sent to his principals. He will return at the close of the season and give a comprehensive report to growers.

Shipping News and Notes.

FRUIT EXPORT is increasing from New South Wales.

The Batlow Rural Co-operative Society, in asking growers to give early details as to their requirements for space, advise that the following shipping programme has been drawn up:—

Export Season, 1930.

List of Sailing Dates from Sydney.
 "Banffshire"—March 20, for Hull.
 "Berwickshire"—April 15, for Hull.
 "Clan Macdonald"—April 21, for Hull.

"Esperance Bay"—April 15, for Hull and London.

"Jervis Bay"—April 29, for Hull and London.

"Demosthenes"—March 15, for London and Liverpool.

"Ceramic"—March 25, for Liverpool.

"Naldera"—March 4, for London.
 "Mongolia"—March 18, for London.

"Narkunda"—April 1, for London.
 "Cathay"—April 15, for London.
 "Mooltan"—April 29, for London.

Commonwealth and Dominion Line.
 —This line will have two sailings in March and two in April, but have not yet compiled their schedule of dates.

APPLE EXPORT FROM N.S.W.

THE export of Apples from New South Wales is being undertaken by the Batlow Packing House and Cool Stores Rural Co-operative Society Ltd., this company having accepted the N.S.W. agency for Messrs. White & Son Ltd., fruit auction brokers, in the markets of London, Hull, Liverpool, Manchester, Newcastle, and Cardiff, in the United Kingdom, and Antwerp and Cologne on the Continent, and co-operating with auction brokers in Glasgow, Hamburg, and Rotterdam.

Special Shipment to Hull. — The Batlow Packing Society is concentrating on a special shipment to Hull by the "s.s. Banffshire," sailing on March 20. All the space available, namely, 35,000 cases, has been reserved in this boat. Holds will be sealed in Sydney, and no further fruit taken aboard to enable temperatures to be controlled.

A special chamber will be reserved on the "s.s. Banffshire" for Pears, which are to be pre-cooled. An advance of 8/- per bushel will be made against the fruit shipped.

Mr. H. Broadfoot, Senior Fruit Instructor, has been appointed to accompany the shipment.

FRUIT FOR GLASGOW.

The claims of Glasgow as a terminal port for Australian fruit steamers, was advocated recently, when Mr. Ford, representing the Clyde Navigation Trust, visited Australia recently. It is now announced that the Blue Funnel Line has arranged for the steamers "Nestor," "Telamon," "Asphalion," "Ulysses," and "Anchises" to load Apples at Tasmania and mainland ports for Glasgow direct next season.

TRADE WITH GERMANY.

By Reciprocal Trade the Duty on Our Apples Would Be Lowered.

An interesting opinion regarding reciprocal trade relationship with Germany was recently published in the Melbourne "Argus," this being the opinion of a leading London business man who has ample facilities for observing trade conditions.

After pointing out the importance of the trade in the export of Australian primary products, the following is stated:—

"There is no doubt that Australia might do a considerably increased trade with Germany if the Australian Government would only make the same arrangements with Germany which have been made by South Africa, New Zealand, and most of the countries of Europe. Every article of Australian produce has to pay a considerably higher tariff duty in Germany than other countries, and Australia is losing a great deal of business with the European country which has the largest population. I have led more than one deputation to the Australian High Commissioner, who has done all in his power to induce the Australian Government to make some arrangement with Germany. It is very simple—it is only that Australia should undertake not to charge any higher tariff on German goods than it charges upon the goods of any other foreign country, and there would be nothing in it to prevent the Australian Government giving any preference to the United Kingdom or any other part of the British Empire."

APPLES FROM OREGON.

The Oregon fruit crop is generally above the average, with the exception of Apples, which is the most important item. The total Apple produc-

tion according to latest estimates is 5,825,000 bushels, compared with 6,950,000 bushels last year.

TASMANIA.

Devonport.

Mr. R. E. Downie, of Gibbs, Bright & Co., addressed a meeting of fruit-growers at the Spreyton Co-operative Packing Shed recently on the subject of "Insect Pests and Diseases in Orchards and Methods of Control." The use of dusts to replace spraying was advocated.

Mr. H. G. Colombie visited Devonport recently. While at Spreyton, he addressed a large meeting of growers on the subject of "Fruit Marketing." Mr. Colombie has donated a 30-guinea cup and 20 guineas in cash as a first prize for the best five cases of export Apples at the forthcoming Australasian Fruit Show at Hobart next month.

Messrs. Clements and Marshall Pty. Ltd., Devonport, are putting up a standardised pack, and the cases will be finished off with a neat colored label.

It is also understood that the Spreyton Co-operative Company is also using a colored label for their shed pack.

Fruit from this district is railed to Hobart for shipment. Dusting for the control of fruit pests has been introduced with reasonable success. These products include arsenate of lead dusts for codlin moth and leaf-eating insects, and other dusts to kill sucking insects and fungoid diseases.

NEW WHITE OIL EMULSION.

As we go to press we learn that a new Australian-made white oil emulsion is now being manufactured. The name of this new oil is Crystol-85.

The manufacturers state that this emulsion contains 85 per cent. by weight pure refined paraffin oil. They recommend it for use on citrus and deciduous fruit trees, and plants in full leaf with perfect safety. It is claimed that it is effective in killing white scale at any season, brown olive scale, white wax scale, white louse and red spider. Also for use in combating codlin moth in conjunction with the usual arsenate of lead programme. It can be used for Peach and Cherry aphids in combination nicotine sprays.

Crystol-85 is being distributed by the Lawford Fruit Exchange Pty. Ltd., Doncaster, Victoria, who also advertise "Fluxit," the new spreader, elsewhere in this edition.

Coming Crop Prospects

**Big Fruit Crop in Sight. - Reports from all States and New Zealand
Victoria's Apple Crop, 3,000,000 Bushels.**

THAT Australia will harvest a big crop of fruit in the coming season is the opinion of Mr. J. M. Ward, Superintendent of Horticulture, Victoria. Victoria, it is expected, will have about three million bushels of Apples, as compared with an average crop of 2½ millions.

Heavy crops of Apples are also showing up in Tasmania, South Australia, and New South Wales.

In Western Australia the Apple crop is medium to light.

Victorian Crop Prospects.—There are heavy crops of Apples in all districts, with the exception of Harcourt, Campbell's Creek, and Strathfieldsaye, which suffered through late frosts in October.

However, the crops from these districts are anticipated to be substantial, in fact, heavier than is at present anticipated by some of the growers.

It is expected that the export of Apples and Pears will be 900,000 to 1,000,000 cases, of which the Pears will probably be 100,000 cases. Such an export season would prove to be a record, and exceed the present record, that of 970,000 bushels in 1928.

Peaches.—A good crop generally throughout the State.

Apricots.—Fair to heavy. Quantong lost much of the Apricot crop through a late frost.

Pears.—A good crop seeing that there is considerable dropping taking place.

Black spot and aphid have shown up more usual on Apples and Pears. A grower at Blackburn stated that black spot was showing on the leaves, but so far the fruit did not seem to be affected. However, the muggy weather is conducive to black spot infestation.

Bairnsdale.—Mr. G. W. Peart (C. J. Goodman's nurseries and orchards) reports, under date November 23:—

At the time of blossoming, all varieties promised a heavy crop, but various factors during the past six weeks have all tended to a considerable reduction all round in crop estimates. Following on last season's exceedingly light Apple crop, local growers expected to have a bumper yield, but a careful survey to-day reveals the fact that most varieties would only be medium to good. The Jonathan is one leading variety that

is much below expectations, and this means a large share of the Apple crop in this locality. Other leading kinds here are Gravenstein, Delicious, Granny Smith, Yates, Rome Beauty, Democrat, Londons.

Plums, too, flowered profusely and failed to set. The leading kinds being such English Plums as Orleans, Diamond, Grand Duke, President, and C. G. Drop.

Pears had apparently set nicely when a pronounced shedding became noticeable, and this week sees the ground under Pear trees strewn with fruit.

Lemons have a wonderful show, and growers whose blocks are above the frost line, reckon on very high rates during the summer months for all the Lemons they can get off their trees:

Cherries, Peaches, Nectarines, etc., are grown in comparatively small quantities, although, of course, the total tonnage is considerable.

The planting that took place during the past winter was confined to good quality orchard land, and the varieties limited to the kinds which have proved themselves commercially profitable for this part of the State. Each season the tendency for standardisation is becoming more pronounced, and this must be for the good of all concerned when costs of production mean all the difference in profit and loss.

E. Burwood.—Mr. A. R. Fankhauser writes (20/10/29):—The principal fruits here are Apples, Pears, Plums, Cherries, and a few Peaches.

Crop Prospects.—Apples and Pears good. Cherries and Plums only fair. Prospects generally much better than last season.

Black spot is causing a good deal of anxiety at the present time.

Somerville.—Cr. W. P. Hutchinson reports as follows:—

Apples.—Jonathan principal variety grown, with a fair number of Five Crown, Romes, Reinette.

Pears.—Williams, Bon Cretien, very good selling, but these shed freely.

Plums.—Although these showed plenty of bloom, there is only a moderate setting.

Apricots.—Light.

Later, November 11, the Jonathan crop is not nearly as heavy as was expected. A very heavy blossoming but setting is patchy.

It looks as though nature is taking a hand to restore the normal crops.

Ardmona (22/11/29).—Mr. Victor R. McNab, Ardmona, reports crop prospects as follows:—

Apricots.—Oulins, normal; Moorpark, 10 per cent. above normal; Blenheim, light, 33 per cent. below normal.

Peaches.—High's Early Canada, Brigg's Red May, Hale's Early, Zerbe, 15 per cent. below normal; Elbertas, Kia Ora, 10 per cent. above normal; Pullar's Cling, average.

Williams Pears, about 15 per cent. below normal.

There was perfect weather during blossoming period, and growers are now fighting green aphid. Fighting green aphid cost hundreds of pounds this year, and ladybirds appeared in millions about November 5 and cleared up the aphid. Frosts on October 20 have resulted in severe losses to growers on west side of the main irrigation channel only, and have reduced estimates in this district by 500 tons of fruit this year. Green aphid accounts for a further reduction of 400 tons of Peaches.

All crops of Pears shed heavily on November 13 and 14, so that only a medium crop is now in sight. Apricots suffered worst from the frost, then dessert Peaches and Nectarines. Canning Peaches suffered only in patches, while Pears did not suffer from frost.

Mildura.—Mr. P. Malloch, Manager, Irymple Packing Pty. Ltd., Irymple, reports under date November 21:—

The principal fruits growing in this district are currants, Sultanas, and Lexias.

The coming crop prospects are good. In Red Cliffs, heavy crops are reported by the majority of growers. In Merbein, crops are reported as very good, and in Mildura district, as average. 1929 season was a record, and it is probable that 1930 will show quite a substantial reduction in respect to tonnage.

Developments of interest in the district are:—(a) The purchase of the Railway Packing Co. by Aurora Packing Pty. Ltd., and (b) substantial extensions and improvements to the packing sheds of the Red Cliffs Co-operative Co. at Red Cliffs, and the Irymple Packing Co. at Irymple.

Pakenham Upper (22/11/29).—Mr. Alex. Ramage reports:—

The principal fruit here is the Apple. The main varieties are Jonathans, Yates, Delicious, Rokewoods, and Statesman.

The crop last year was very light, owing to the very heavy crop the year before. The prospects for the coming season are only normal. Black spot has made its appearance, owing to the continual wet weather.

"Valley View" orchards are building an up-to-date cool store. This building will be of concrete with corkboard insulation. A Ruston-Hornsby crude oil engine, 42 h.p., and a 20-ton "Linde" compressor is being put in. The capacity of the store will be 18,000 cases. The store will be completed by the end of this year.

The Toomuc Valley Orchard has been taken over and worked by Mr. Ernest Kitchen, and is showing a heavy crop for the coming season, and up to now the fruit trees are looking strong and healthy, and should harvest a record crop.

Strathfieldsaye (21/11/29).—Mr. T. Somerville reports as follows:—

Principal fruits:—Apples, Pears, Cherries, Plums, Peaches. Varieties: Apples, Dunn's, Cleo., Jonathan, Romes, Delicious, Stone Pippin, Five Crown, Granny Smith.

The prospects were good, but Apples were ruined by the heavy frost just when they were set, so the prospect this year in my district is no better than last year—which was a very scarce year. Two varieties escaped the frost—Rome Beauty and Five Crown.

This is a severe blow for growers of Apples and Pears for export. It is a severe blow to have two bad years running.

Healesville (22/11/29).—Mr. F. W. Vear advises that the crop of Apples at Graceburn Valley Orchard is good and the fruit clean. The crop is heavier than last season. The varieties grown are Yates, Jonathan, Granny Smith, Sturmers and Five Crowns, in that order.

In the district generally, Jonathans and Five Crowns are most in evidence. Crops are in some cases good, in others light, and a fair amount of spot.

The rainfall has been heavy, and very few fine days for the necessary orchard work.

Bunyip.—Mr. Fred. Thomas, M.A., Bunyip, reports as follows on November 18:—

The main fruit crop consists of Apples, and the favorite varieties are Jonathans, Delicious, Rome Beauty, Five Crowns, Yates, Rokewoods, Sturmers, and Gravensteins.

Some Pears are grown—the W.B.C., Packham's Triumph, Josephines, and Beurre Bosc.

The Plums were affected by the frosts, and the crops are very light.

Apples set heavily—but have in some cases dropped unexpectedly. Jonathans, Rokewoods and Romes are heavy, Five Crowns medium, and Yates light to medium. Delicious and Sturmers have set good crops.

All varieties of Pears have set good crops.

Harcourt.—Mr. James H. Ely writes under date November 16:—

The principal varieties of Apples grown in our district are Munroes, Cleos., Jon., London's Pippin, Romes, Delicious, Stone Pippin, Schroeder, Rymer, and possibly about ten other varieties in smaller quantities.

Pears.—Principal varieties grown: Winter Neils, Josephine, W.B.C., Packhams, Winter Coles, Beurre De Anjou.

The season promised to be a very full crop, and possibly would have totalled the quantity of 1928, when half a million cases were harvested, but early in October a severe frost cut possibly nearly 50 per cent. of the crop—the lower-lying orchards being completely cleaned out. In some of the orchards on higher ground the crop was only partially cut, Jonathans, Cleos., and Munroes being cut the worst.

Pears are thinning out much more than usual, possibly partly due to frost effects.

To sum up the crop, I should say—Apples.—50 to 60 per cent. crop.

Pears.—Light to medium.

Plums.—Very light (frost taking a large portion).

Cherries.—Light.

Peaches and Apricots.—Only grown in small quantities.

Just at present we are experiencing light, misty rain—very suitable weather for the development of black spot. Many growers are putting a further spray of lime-sulphur on as a safeguard.

It is anticipated that both packing sheds will experience a fairly busy season; also that our cool stores will be filled.

Effect of Late Frost Damage.

On the morning of October 22, this district was visited by one of the most disastrous frosts that it has experienced for many years.

All the lower portions of the Harcourt valley, embracing an area about five miles long by one wide, were practically wiped out as far as the fruit crop is concerned.

In other portions of the district the fruit was thinned in a greater or less degree.

The principal fruits affected were Plums, Apples and Pears, and it was noticeable that some varieties were much more susceptible than other.

Diamond Plum, W.B.C. Pears, and Dunn's Favorite Apple were among those that suffered most.

On the border line of the frost-affected area, only the lower portion of the trees were cut, anything of a height of eight feet or over escaping. On some Plum trees that had all the foliage on the lower branches scorched, the upper portion was quite healthy and bearing a good crop of fruit.

It is estimated that the loss is from 40 per cent. to 50 per cent. of the crop, and as the anticipated crop was at least half a million cases, some idea of the loss can be obtained.

The frost will probably be a benefit to those orchards where only portion of the crop was destroyed as it will tend to equalise the crop from year to year.

In one orchard where the thermometer registered 24 degrees F., at 3 a.m., the owner lit fires and raised the temperature to 32 degrees F. by sunrise. Although his orchard is situated in the centre of the worst effected area, he succeeded in saving a large portion of his crop.—Jas. H. Lang.

Pomonal.

A wide range of fruits is grown in the Pomonal district, but the commercial crop is predominantly Apples. For some reason, this district is particularly suited for the production of high quality, well-colored Apples with a long storage life, and because of this, Pomonal has been in the export business from its initiation, and sends the bulk of its fruit to the English and European markets.

In common with the rest of the State, this district last year suffered a partial crop failure; but this year there are indications that the crop will be an excellent one, though not as large as the record 1928 crop.

The chief varieties grown and exported are Jonathans, which are medium to good; Cleopatras, which are fairly heavy; and Dunn's, which are not heavy, but are in most cases carrying a well-spaced crop of Apples.

This year there has been formed in Pomonal a Fruitgrowers' Association, and

a community pack

has been started, under a common label and requiring a uniformly high standard of quality. It is expected that some 25,000 cases will be exported under this "Big Apple" brand

through Messrs. N. N. McLean Pty. Ltd., of Melbourne, on consignment to Mr. H. G. Colombie's principals overseas.

The whole of the pack will be in white softwood standards, wire-bound, bearing a brightly colored label on each case, and the Apples will be wrapped in pink, printed wrappers, bearing the special brand of the community pack.

For the first time in this district "Volck" oil is being used to combat codlin moth and various lesser pests. Many growers are using it, and are enthusiastic about the results it is giving. One of the most experienced and prosperous growers in Pomonal, Mr. W. J. Cox, in addition to using Volck on his Apples, has used it against black Cherry aphids when his trees were in full leaf and fruit. The result is astonishing. It has killed the aphids, and there has been no fresh infestation; there is not the slightest burn on leaf or fruit, nor any falling of either; and the trees and fruit have a beautiful clean appearance, as though polished with wax. There is no doubt that the advent of "Volck" will revolutionise spraying methods.

Several orchardists are also introducing the dusting method of pest control, and good results are being obtained. It seems likely that future pest control will be effected by a combination of dusting and the use of "Volck," the dust being used early, when the ground is wet and heavy for a spray pump and time is all-important. Then later "Volck" would be used alone to ensure codlin control and give better colored Apples and no spray residue at the time of picking.

The Victorian Fruit Marketing Association is well supported in Pomonal, nearly all growers having joined. Advice has been received that Mr. R. E. Fowler has been elected to represent the North-Western district of Victoria on the Executive Committee of the Association.

Dandenong Ranges.

An excellent crop of Strawberries and other berry fruits is reported from the Dandenong Ranges, Victoria. Through the activities of the United Berry Growers' Association, 180 tons of Strawberries have been placed with the Australasian Jam Company, and the direct distribution to householders is being continued.

Mr. J. M. Mitchell, Secretary, United Berry Growers' Association, stated recently that what he considered was a serious handicap to the berry industry was the preferential

treatment given to the sugar industry.

Officer (26/11/29).—Mr. R. H. Bunt reports that the principal fruits grown are Apples, and that a good general crop is showing through the district. Certain damage has been done by hail this season. Last year's crops were very light.

As regards district developments, Mr. Bunt continues: "Nothing new is taking place, nor will without compulsion."

Tasmania.

A meeting of the State Fruit Advisory Board was held on November 19, when many matters of importance to the industry were dealt with.

Berry Fruits.—It was stated that Australia would this year be faced with the biggest crop of small-fruit it had ever known. It was decided to ask the Commonwealth Government for a bounty on the export of Black Currants and Raspberries.

Export Grading Regulations.—The Board expressed the desire to know the attitude of the new Government regarding the suspension of the regulations for 12 months. It was decided to invite the Minister of Customs to visit Tasmania to consult the Board before altering the regulations.

Mr. Frank Walker, fruitgrower and nurseryman of Lalla, Northern Tasmania, writes as follows on November 19:—

It is too early to forecast fruit crops yet, as so many things may happen; a better idea could be formed in two or three weeks. As far as appearances go, there is a good setting of Apples; till the usual drop takes place, nothing definite can be stated, but we think Apples generally will be a full crop in Northern Tasmania.

Pears, most varieties good, except Winter Coles; these are very patchy.

Plums, most of the early flowering sorts, were badly frosted, later kinds are decidedly light with us.

Huonville.—Mr. D. H. Calvert writes under date November 21:—

The principal fruits grown are Apples and Pears, chief varieties are Sturmer, Cleo. Scarlets, French Crabs, Democrats, Jonathans. Pears—Winter Coles, Beurre Bosc, Winter Nelis.

The crop prospects are rather patchy. Pears are light. In Apples, Scarlets and French Crabs are also

on the light side. I should say there would be a 30 per cent. increase on last year.

As regards new developments, there has been quite a large number of new orchards planted this year, mostly small additions to existing orchards.

New Cool Store.

The Port Huon Association is increasing the cool store capacity to 110,000 cases, at Port Huon. My father and myself are erecting a store for our own use on our property. Mr. May, of Melbourne, is the contractor for both stores.

Up to the present there does not seem to be much black spot showing, and I think the spraying has been done more thoroughly this season. I think there will be a large increase in the number of growers using labels and planed ends for the coming season, also printed paper wraps.

Devonport.—Apples are the main fruit crop grown in the Mersey Valley, the principal varieties being Jonathan, Sturmer, Five Crown, with a few Cleos., Dunn's, and King David. Cox's and Ribstons are being cut out, Granny Smith being grafted on. The recent plantings of Democrat are coming on nicely. There are very few Pears grown.

Crop Prospects.—In most of the orchards an excellent showing. A frost on October 22 affected isolated orchards. Some orchards, particularly those on low ground, were badly cut. In other sections, however, no damage was done. On the whole, the crop in the Mersey Valley will be much heavier than last year.

Scottsdale (Northern Tasmania, (21/11/29).—The chief fruits grown here are Apples and Pears. Varieties: Apples—Sturmers, Cox's, Jonathans, F. Crabs, Dunn's, A.P.M.'s, Wolseleys. Pears—Bosc, Coles, W.B.C.'s.

Crop Prospects.—Above average. Very light last season. Black spot not much in evidence. Red spider rather troublesome.

Latrobe (19/11/29).—Mr. A. Boatright reports as follows:—

Principal fruits:—Apples, Pears, Plums, Kentish Cherries.

Apples would have been heavy only for frost in October. I now look upon the crop as normal; much better than last year. Pears.—Frost destroyed 90 per cent.

Premaydena (21/11/29).— Apples and Pears are the principal fruits grown in this district.

Apples.—Good crop, but not heavy, as was expected. Cleopatra heavy in some orchards; Scarlets patchy.

Pears.—Normal crop. B. de Cap. light. Both Apples and Pears are about 50 per cent. heavier than last season.

The majority of growers are extending their orchards, planting mostly Apples—Democrat and Granny Smith.—T. K. Kingston.

New South Wales

Batlow.—As far as this district is concerned, we anticipate harvesting a full normal crop of Apples and a medium crop of Pears. Some growers were badly hit with the late frost, having their whole crop practically wiped out, whilst others practically escaped injury altogether.—H. V. Smith.

Bathurst.—Messrs. Gordon Edgell & Sons report under date November 22, 1929:—

The chief crop of fruit in this district is Apples, then come Pears, Peaches and Prunes. The chief varieties of Apples are Granny Smith, Jonathan, and Rome Beauty. Pears are Packham's Triumph, Williams, Buerre Bosc, and Winter Cole.

The coming crop prospects are good. There has been a rather heavy setting of all fruit, though some growers have experienced losses from late frosts. Compared with last year, the prospects are bright.

The month of November has been the best for several years, as we have had over 2½ inches of rain. The whole of last summer was extremely dry, and we have had two hard, dry winters.

Penrose.—Mr. F. W. Chesterfield reports under date November 19:—

The principal fruits grown in this district are Apples and Pears, chiefly the former. Varieties (Apples), Gravenstein, MacIntosh Red, Jonathan, London Pippin, Delicious, Granny Smith, and Yates; (Pears), Williams, Packhams, Winter Cole, and Josephines.

Most varieties have set pretty well, and I should say the crop would be at least 20 per cent. heavier than last season.

Last season, for the first time, the growers consigned in bulk, which showed a great saving, as against individual consignment.

We are having plenty of rain, rather too much, as the weather has been favorable to black spot development,

but so far does not seem to be much about. Trees are looking very healthy and making vigorous growth.

Penrose was fortunate in escaping the late frosts that caused so much damage elsewhere.

Tallong.—The principal fruits grown here are Apples and Pears. Apples, Rome, Five Crowns, Granny

J. G. MUMFORD

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Company Ltd., Melb., Vic., Australia.
Murdoch Bros., and A. J. Walshe &
Co., Hobart, Tasmania.

Smith, Delicious, Gravenstein, and Jonathan; Pears, Williams, Packham and W. Cole.

Apples.—Rome, Granny Smith, and Delicious have set well; Five Crown, Gravenstein and Jonathan settings of a patchy nature.

The prospects are for a 25 per cent. increase on last year, which was light. The coming season should be an average crop.

In Pears, the setting of Williams has been heavy. The setting of Packhams and W. Coles very varia-

able. Prospects are for a slight increase on last season, which was below average. Summed up—an average crop.—Harry P. Davenport.

Tenterfield.—The principal fruits are:—

Cherries.—E. Lyons, Werder's Early, and Napoleon Bigarreau, and Florence.

Apples.—Jonathan, Democrat, Delicious, and Granny Smith.

Pears.—Williams and Beurre Bosc, Winter Neils.

Plums.—President, Angelina, Grand Duke, and Ponds.

Peaches.—Elberta, Wiggin's Mayflower, McDevitt's, and High's E. Canada.

Crop Prospects.

Cherries.—Best crop for many years. **Apples.**—All varieties showing a full crop. **Pears.**—Irregular; Williams, Howell's and Beurre Capiamont showing full crop. **Peaches and Plums.**—Good even crop, except on low situations, which were cut by late frosts. **Apricots.**—Exceptionally heavy, except on low situations.

YOUNG.

Interesting Review of District Crops.

(By T. A. Tester.)

Cherries.—At the time of writing this report, the Cherry crop is being harvested. The earlier Cherries were rather small, owing to the continued dry spell, but two good falls during the growing season had the effect of materially increasing the size of the fruit now being marketed. As could naturally be expected, a certain amount of the fruit was split, but that is being discarded, and generally the position is greatly improved.

It does not look as if the same quantity will go forward this year as last year, when about 100,000 cases were marketed. Some four or five trucks will go forward to Victoria for the preserving firms, but the main bulk is marketed through the Sydney markets.

Gooseberries also are being marketed in rather plentiful supplies, and a very good sample is going forward, bringing from 7/- to 10/- per quarter-case for specials.

Apples and Pears.—Prospects for the Apple and Pear crops are very bright, the trees showing good progress and fruit being in excellent condition. With five soldier settlements in this district, it is expected a large quantity will be marketed in the coming season. The prospective out-turn

of Apples in the Young district in the year 1932-3 is up to 300,000 bushels. Co-operative societies are in full swing on each settlement, though Apples have not been co-operatively packed to any extent. Some minor attempts at co-operative methods has not been very well handled, but undoubtedly in the future, Apple packing on a co-operative plan is sure to be favored.

A cool store is being erected in the town of Young, and it is expected this will be the nucleus of other cool stores which will eventually spring up in the district on the soldier settlements.

The Prune Situation.

The biggest problem that has confronted the soldier settlers in the Young district has been the quantity of Prunes that was this year harvested. A good deal of difficulty was experienced in arranging for the various co-operative societies to work co-operatively, but in the middle of the year an Association of Co-operative Societies was formed, and quickly got to work, and has done remarkably well in the short time at its disposal. It is anticipated that the whole of the Prune crop of some 500 tons will be sold before next year's Prune crop comes on the market.

The position will be more appreciated when it is realised that the Association did not get to work before the merchants had practically arranged for their supplies for the season. This rather points to the acquisition by the public of a more educated taste for Prunes since the public must be consuming Prunes in a much greater quantity than previously. The prospective out-turn of Prunes in the Young district is some 2,000 to 2,500 tons per annum. Last year Australia consumed about 900 tons, and this year it looks as if the consumption will be more than double. As a matter of fact, it will need to be again doubled if the Prunes from Young are to be absorbed in Australia.

Everything points to the Australian Prune situation being more or less influenced by the situation in the Young district, because the Association will control much the largest output of Prunes in Australia. There are three big dehydration plants on the settlements, and these have been erected at a cost of about £50,000. Another plant is to be erected on the Waterview settlement, probably next year, whilst arrangements are at present being made for a central processing house to be erected in Young, where the Prunes will be sweated, graded processed and packed ready for market.

It is probable that the Young organisation will be the biggest of its kind in the southern hemisphere, if not in the world, and its equipment will be the latest thing for the handling and packing of Prunes. It is aimed at mechanically handling the product wherever possible, eliminating manual aid except where necessary.

One of the first things the Association did was to call in the services of an expert advertiser, and the Association adopted the brand "Verity," and very extensive advertising has been done in both N.S.W. and Queensland. The quality of the Prune is excellent, and experts say that it is unequalled even by the best of the imported Prunes.

South Australia

Mr. J. B. Randell, an appreciated fruitgrower at Kenton Park, Gumeracha, South Australia, writes under date October 24:—

The Coming Crops.—The outstanding feature of the season so far is the very short rainfall experienced in this district over the winter period; this is causing considerable apprehension in the minds of growers regarding the development of the fruit, as there is little moisture in the subsoil to carry on the trees over the summer.

At present the orchards are looking remarkably well; a heavy blossoming is nearly over, and the setting looks as though a heavy crop will eventuate if the weather and other conditions are at all favorable.

There is at the moment a very pleasing absence of disease, the trees looking exceptionally healthy and bright. The "calyx" spray is in progress as I write, and in almost every case consists of arsenate of lead combined with a fungicide: some growers using lime sulphur, others Bordeaux, and a few Burgundy in this combination. The Pear crops (chiefly "Williams" in this locality), is well set and quite on the heavy side. Plums are in most cases light to very light, although a few report having a good crop; the latter, however, are exceptions.

Regarding the writer's own practice—

Spraying.—From past experience I have found the lime sulphur application to be the most satisfactory for the control of most of the troubles which necessitate a late winter or early spring application. The most troublesome being red spider and woolly aphis.

Certainteed Mulching Sheathing

For Increased
Crops
Produced at
Lower Cost

Conserves Soil Moisture
Prevents Weed Growth
Promotes Plant Growth
Increases the Crop

INEXPENSIVE EFFECTIVE

Follow the Practice of
Successful American
Growers - - - Use

Certainteed Mulch

GIBBS, BRIGHT & CO.
27 Grenfell Street
ADELAIDE

There are some seasons, however, when it would seem that atmospheric conditions are particularly favorable to the development of these and some other pests, and one has to follow these sprayings up with some other which can be applied with safety to the foliage and fruit; up to the present there is none that I have tried that I feel very enthusiastic about.

Some recently introduced proprietary lines, I am told, are going to "fill the bill." I hope such may prove to be the case. There is a very real need of some really satisfactory material (whether dust or wet spray) which can be relied on to kill these pests without injuring the tender foliage, as occasionally one finds that although they were apparently under complete control up to the breaking of the buds, conditions later come into existence which seem to be very favorable to their development and they then multiply in myriads and do quite a deal of injury to the trees by drawing so heavily as they do upon the sap.

Fortunately, these conditions are experienced only once in a while; so far, nicotine preparations seem to be among the more effective remedies, but are unfortunately very costly when heavy applications become necessary.

Manuring.—Experiments with orchard fertilisers are up to the present very disappointing, even heavy applications of various phosphatic fertilisers have given little evidence of being beneficial, which is hard to explain when one takes into consideration the very marked results which accrue from these same fertilisers when applied to pastures and field crops.

In this district orchard areas have been extended to a small extent during the planting season just past, the varieties planted being confined almost entirely to export Apples.

Spring ploughing has in most cases been completed, and preparations are well in hand for the various summer crops which are grown in addition to ordinary orchard crops. Of late, there has been an increased amount of attention to dairying, brought about to a great extent by the advent of two of the metropolitan milk supply companies, who gather the milk by motor vehicle daily, paying prices considerably in advance of those obtainable in the old days. Incidentally, land values also have very considerably increased of late years,

and in consequence some of those who have only recently made a start find the primary producer's lot is not quite so rosy as it is sometimes thought to be by those who are not fully conversant with all the facts of the case.

Balhannah, 19/10/29.—Mr. H. N. Wicks reports that the main fruits grown here are Apples, Pears, Plums and Prunes.

Crop Prospects.—Apples and Pears generally heavy. Pears seem to be thinning out very considerably and apparently, although first indications were for a very heavy crop, the thinning out, which is at present taking place, will bring the crop down to a medium one in a number of instances.

Plums and Prunes light to very light, some gardens being almost bare of these lines.

Organisation.—Keen interest is being taken in the S.A. Fruit Marketing Association, the majority of

about 70,000 being packed in our well-equipped packing house, which puts up the "Red Star" brand, well known on Melbourne markets.

The packing house has an electric "Lightning" grader, with a two-way brusher, and will grade 1,000 cases a day. It is also well equipped for dried fruits with electric grader.

There is very little planting being done in this district at present; if any, it is citrus.

My orchard consists of 34 acres, mainly citrus, with just a few acres of vines and stone fruits, also Pears. —G. M. Arnold.

Western Australia.

Mr. Geo. W. Wickens, Superintendent of Horticulture, writing at the end of October, states that there is a heavy setting of stone fruits—Peaches, Plums and Apricots—in Western Australia. It was then too early to state what the Apple, Pear and citrus crops will be.

Donnybrook, 8/11/29.

Mr. Gus Sharp, fruitgrower, Donnybrook, W.A., writes:—

As was anticipated from the record crop of last season and the dry conditions, the Apple crop this season is very light.

Pears are a normal crop, and Oranges showing good promise.

Producers' Markets Ltd.

West Australian producers have organised the Producers' Markets Co-operative Ltd. for the sale of fruit, vegetables, poultry and eggs. The following sections are represented by directors elected by the shareholders of those sections, as follows:—Messrs. A. C. R. Loaring (Chairman, citrus), C. W. Harper (Westralian Farmers Ltd.), J. McNeil Martin, T. G. Sounness, Owen Sparks (pip fruit), T. H. Ilbery (stone fruit, etc.), J. Arbuckle (vegetables), R. B. Aiken (poultry and eggs), P. H. Taylor (Grapes). The manager is Mr. H. R. Harper.

For the year ending June 30, 1929, a dividend of 7 per cent. and a cash bonus of 2 per cent. on fruit and vegetables have been paid to shareholders. Shares may be taken up by producers on the following terms:—

The minimum is 10 shares, and is payable 2/- per share on application, the balance being 1/6 per share per month. Bonus-earning commences on allotment.

There is a branch at Hannan-street, Kalgoorlie, the manager of which is Mr. D. J. Sutcliffe,

"YARRA"

BRAND

SPRAYS

PARSONS & JAUQUES
Manufacturing Chemists
 6 Patterson Street } **Abbotsford, Vic.**
 155 Yarra Street }
Tasmanian Agents—
N. L. HOPKINS, HOBART

shippers being now included in its membership. This body is making its presence felt in its sincere endeavor to put the S.A. pack on a better footing.

Waikerie (22/11/29).—The principal fruits here are citrus, Sultanas, Currants, Gordos, Doradillo, Apricots, Peaches, Nectarines, Plums, Pears.

The crop prospects for citrus at present is hard to tell, as the fruit is dropping and continues until Christmas, but just now the crop is heavy.

All vine fruits are showing well.

Stone fruits are on the light side.

Comparing the crop with last year, vines and citrus seem about the same, but stone fruits appear to be lighter.

Waikerie is the biggest producing citrus area in South Australia, this year's pack being about 95,000 cases,

New South Wales Notes.

Second Citrus Crop—Fruit Drink Trade—"Householders' Days" to Relieve Gluts—Shortage of Lemons—The Coming Federal Citrus Convention—Will Citrus Packing Houses Relinquish Direct Trading?

General Notes.

A VERY HEAVY BLOOM of all citrus trees followed the breaking of drought conditions early in the year, and this resulted in the setting of a second crop. To many N.S.W. growers, whose trees were actually bare of the main crop, this was welcomed as some sort of recompense to such an extent that additional cultural practices were undertaken to help the crop along.

It is now possible to survey the situation here regarding this crop. Most of the fruit will mature during January next, principally late Valencias, and although small, will be fair quality fruit.

Although exceedingly difficult to estimate the quantity, at least 100,000 bushels will be available, including Mandarins. The latter will also be small, principally due to the abnormal setting and not very favorable growing period.

Common Oranges are now maturing, and besides being on the whole poor in quality, are thick skinned. Quite a number inspected in the markets were dry, and agents in consequence are discouraging consignments at any rate for the present, and until the natural crop has been disposed of. All of this fruit will face severe competition from heavy stone fruit and other summer fruits, which will be abundant during the selling period, and it is not expected that prices will be attractive.

The opportunity for disposing of the Oranges per medium of the fruit drink trade

appears to be good, and even though this may not this season bring the grower great profits, it will undoubtedly stimulate the public appetite towards a very heavy consumption of Oranges in this manner. Just as present it is impossible to get natural Orange drinks conveniently, and our Railway Refreshment Rooms are not making these available to the same extent as in Victoria.

In this respect it is disheartening to know that whereas the N.S.W. Railway effort for a time beat Victoria in the citrus sales, they are now rapidly losing ground, despite the fact that the fruit is sold cheaper. This is wholly due to the fact that whereas the Victorian people drink Oranges, the consumers here are ask-

ed only to eat them. That, of course, means taking them home only, and makes no provision for thirst quenching, which, after all, is the natural inclination during summer weather.

A special effort should now be made to cope with the second crop Oranges in this manner, and it is to be hoped that a vigorous campaign will be instituted early enough to ensure the consumption at a profitable price of fruits which will otherwise be wasted.

To Relieve Gluts.

A suggestion has been made to deal with surplus fruits which accumulate on the Sydney markets, and this briefly advocates the institution of "Householders' Days." The average person knows little about the markets, and has little inclination to visit there—this probably is due to a complete lack of knowledge as to anything connected with the markets. The idea provides that during seasons of heavy supply, and when stocks have so accumulated as to create glut conditions, all fruits (and even vegetables) should be periodically collected and sold by the case or half-case on stipulated days. The public would be fully advised as to what is available and also the price to be paid, and it is anticipated that if the selling hours are chosen to obviate traffic troubles, there will be no difficulty in disposing very large quantities which would otherwise go to the tip.

It is understood that the Fruit-growers' Federation will fully discuss the possibilities at next meeting, as will the Progressive Housewives' and Housewives' Associations. Not only will individual buyers be catered for under this scheme, but it is hoped to develop a large case order trade, a feature quite possible when customers know they can confidently place an order and rely upon satisfactory service.

Agents who have been interviewed regard the innovation as worthy of trial, and realise that it will be a great relief to have their stands cleared at regular intervals. This, too, will spare them the necessity of explaining away such unpleasanties as "sent to destructor."

Growers stand to benefit in full, because the ruling level of prices will be maintained. It is agreed that this scheme can be extended to include suburban centres, and thus spare the

inconveniences of householders who live some distance from the markets. Seeing that the matter is now well under discussion, it is sincerely hoped that at least an effort will be made to either try it out or make it the basis of a fearless effort to solve a great problem.

Lemons are at famine prices here now, the latest price per bushel being 25/-. As the next crop has been almost wiped out by successions of frosts and other causes, the market will be entirely bare very shortly. The result is that for the first time almost on record, Lemon juice is being brought in from other parts. Those who have the trees—even though they have not the fruit—and those who heavily planted out from about three years ago are naturally exultant, and anticipate a very rosy future. That this is a gross error of judgment is proved by the fact that until the frost calamities, Lemons scarcely paid for the growing.

The position as regards plantings causes great concern amongst those who know what trouble is in store when trees now coming into bearing are fully producing. There is no doubt that within five years the Lemon position will be worse than ever before, and will undoubtedly be aggravated, if growers are stampeded into still heavier plantings. History will then be repeated until with a sigh of "hard luck" the axe is once again wearily applied.

Growers do not sufficiently realise that the demand for Lemons is always limited, and always will be. A vigorous campaign may absorb many thousands of bushels of any other kind of fruit, but with Lemons nothing on earth can stimulate trade to the consumer beyond a certain point. It is impossible, for instance, to advocate either drink or eat more Lemons.

A country order business, covering nearly a million cases of fruits, will shortly operate under arrangement with the M.I.A. Growers, with whom contracts are to be made to supply at prearranged rates for five years. This is a wonderful instance of what unity amongst growers can achieve, and proves that the merchants—who will actually handle the business—are glad to be relieved from the cares and worries of collecting daily supplies from stand to stand. Together with the large canning contracts and the railway orders, practically the whole output of the area is now sold for five years. This means stabilisation of the industry and the knowledge of a definite return to the growers, all of whom may now be relied upon to work like Trojans to ensure big yields,

Federal Citrus Convention.

Citrus growers in N.S.W. should be very interested in the forthcoming Federal citrus Convention, which representatives from all States will attend at Mildura on February 3 next. It is a pity that individual growers who hold aloof from the packing houses could not be induced to take advantage of the occasion and pay a visit. For many years individual growers have attempted to disregard the co-operative packing of Oranges, but the time is fast approaching when necessity will compel action to be taken. It is generally believed here that the existing packing houses will

relinquish the direct trade

business, and new arrangements are to be made.

Agents complain that they have been expected to find markets in competition with packing house efforts and that this has not been beneficial to the industry. Either the houses should trade or not trade, and it would certainly appear that strict attention to growing and packing for market should be the limit of the growers' endeavor.

The business of distribution is something quite apart from orchard operations, and call for distinct business knowledge and a business connection, such as the agents have after many years' experience gained.

Export and country order trades are actually specialised avenues of distribution, calling for a very high knowledge of local varied requirements, and it would seem impossible for any series of spasmodic efforts such as packing houses must of necessity annually institute. Continuity of supply is the essence of every known business, and this will never be attained until all the growers are united in co-operative effort.

CURLWAA IRRIGATION AREA.

In the horticultural section of the Curlwaa area there were 152 lots occupied at September 30, 1929, containing 2,000 acres. The planted areas comprised:—Citrus 490 acres, vines 475 acres, deciduous 281 acres, and further areas were planted during the August-September planting season.

At the Mildura Show on September 6 the majority of prizes for navel and all prizes for Grape-fruit were won by Curlwaa settlers' exhibits.

The bud burst of Sultana and Currant vines was very even, and gave promise of good crops later, if favorable conditions continue.

CHERRY SLUG.

Control With Arsenate of Lead.

New Parasite Introduced.

AT the recent Annual Conference of the N.S.W. Fruitgrowers' Federation, a resolution was adopted as follows:—

"That where the host plants of the Pear and Cherry slug are infected with this pest, compulsory spraying be enforced."

On this subject, the General Secretary of the Federation (Col. E. E. Herrod) writes, stating that the Government entomologist has reported the Pear and Cherry slug to be one of the most easily controlled of pests—spraying with lead arsenate powder (1 lb. to 40 gallons) giving immediate control. The entomologist also reports having been successful in procuring from Great Britain a parasite of the Pear slug, and he anticipates that specimens of the parasite will be available for laboratory use in December of this year.

The parasite in question is hardy and vigorous, and if established in this State, might reduce the Pear and Cherry slug pest to a negligible factor. The entomologist states that a further report will be furnished at the end of this year.

PRUNE SALES.

Successful Distribution by Railways Department.

To be Followed by Cherries, Peaches and Grapes.

Satisfaction is expressed amongst Prune-growers in the Murrumbidgee irrigation area because of the clearing up of their stocks.

Growers in the Young district, who had an exceedingly heavy crop, also expect to dispose of their Prunes before the new season's crop comes in.

The M.I.A. growers do not anticipate any glut problem to face next year, as the Prune-sweet campaign which has been carried on so successfully by the co-operative societies in conjunction with the railway refreshment rooms will be continued next season.

At the end of the Prune campaign, the railway refreshment rooms will concentrate on Cherries sold in cartons, followed by Peaches and Grapes.

AUSTRALIA AND NEW ZEALAND.

Fruitgrowing Conditions Compared.

Mr. R. A. Boyle, fertiliser manager of Dyes & Chemicals (Aust.) Ltd., who recently returned after spending eight months in New Zealand, during which time he toured the fruitgrowing districts, was very much impressed with the development in the industry in that country.

He found the orchardists very willing to adopt new ideas for the improvement of their business. The activities and the service rendered by the New Zealand Fruitgrowers' Federation are very creditable, and it is pleasing to note the sound organisation amongst all growers towards a common end.

In the Nelson Province, where the bulk of the New Zealand Apples are grown, a very satisfactory crop was harvested. Many orchardists had installed the

stationary spray plant

idea. This is worked from a central point on the farm, from which spray liquid is carried by pipes to different parts of the orchard.

Liming and cover cropping are regularly performed. The soil is for the most part of a clayey and rather poor nature. Attention to physical conditioning of the soil, however, and fairly heavy feeding with artificial manures, have resulted in a remarkable response from such shallow soil.

Valuable service where manuring and pest control is concerned is given by the Cawthron Institute of Nelson. Keen interest is being displayed in the new synthetic fertilisers, and Nitrophoska particularly has appealed. Indications are that there is a very great future in store for this highly concentrated complete fertiliser where fruitgrowing, at least, is concerned.

Mr. Boyle was repeatedly questioned concerning Australian methods and conditions. He is of the opinion that greater encouragement should be given, and facilities provided for more interchange of ideas, preferably by means of reciprocal visits between growers in the two countries.

T. J. Poupart's 1930 Calendar.—A handsome calendar for 1930 is to hand from Mr. Fred. J. Andrew, 416 Little Collins-street, Melbourne, who is the agent of T. J. Poupart Ltd., fruit salesmen, Covent Garden, London, England. In the centre of the calendar is a photograph of the main warehouse at Covent Garden. There are also photos. of branches at Eastcheap, Liverpool, Spitalfields, and Hull...

FRUITGROWERS' COOL STORES' ASSOCIATION OF VICTORIA.

THE quarterly meeting of the Fruitgrowers' Cool Stores' Association of Victoria was held at Melbourne in November. Cr. W. Mock, President, occupying the chair. There were also present:—Messrs. Frank Moore (Blackburn), H. L. Tomkins (Croydon), R. M. Finlay (Diamond Creek), J. J. Tully (Doncaster Central and Orchardists), J. Tully (Doncaster West), J. H. Lang (Harcourt), J. M. Watt (Hastings), A. Smart (Pakenham), J. G. Aird (Ringwood), T. W. White (Somer-ville), H. J. Willoughby and F. Stockton (Tyabb), F. J. Byrne (Wantirna), A. E. Hocking, E. H. Hatfield (private stores).

Eradication of Blackberries.—A formula for the eradication of Blackberries was furnished by the Lands Department, showing methods of poisoning, the cutting process, cultivation, and eradication of briars. It was decided to send a copy to each affiliated store.

Advertising.—Decided to provide £63 towards the cost of providing 20,000 copies of an Apple Recipe Booklet. The railways provided £100.

Fruit Show.—Decided to hold a fruit show in conjunction with the Chrysanthemum Show of the Royal Horticultural Society at the end of April, affiliated stores to be requested to put up fruit displays and pay 5/- per 1,000 case space to an advertising fund, and that contingent on adequate support being promised, £50 be allotted to the show prize fund.

VICTORIAN FRUIT SHOW.

Big State Event Planned for Next April.

A FRUIT SHOW on a substantial scale is being organised by the Fruitgrowers' Cool Stores' Association in conjunction with the Royal Horticultural Society.

This event will be held at the Melbourne Town Hall on April 30 and May 1 next.

A big crop of fruit is showing, and it is hoped that by making a comprehensive display some very effective propaganda work may be done to increase the consumption of fruit.

This fruit show will be in conjunction with the Chrysanthemum Show of the R.H.S. The Cool Stores' Association, with the assistance of growers, hopes to raise about £150 to offer in prize money and trophies. Prizes

will be for competitive plate or specimen exhibits, tray exhibits, and packed case exhibits.

It is hoped that in addition to fresh fruit exhibits there will be large and attractive displays of dried and canned fruit.

The organisers are looking forward to the enthusiastic support of growers in order to make a success of this show, believing that it holds out the possibility of extension in future years.

There is certainly a need for a comprehensive fruit show in Melbourne to impress on the public the value and importance of the industry and to carry on helpful publicity to induce a greater consumption of fruit.

SUGAR INDUSTRY.

Embargo to Continue.

A statement was made by Mr. Forde, Assistant Minister of Customs, on November 16, to the effect that the cotton and sugar industries would be carefully watched by the new Federal Government.

Regarding sugar, Mr. Forde stated the present embargo and system of control would not be altered. The industry employed 100,000 persons and deserved effective protection in the same manner as secondary industries.

Berry-growers Adversely Affected.

Mr. J. M. Mitchell, Secretary, United Berry-growers' Association, points out that the sugar agreement has adversely affected the berry-growing industry. Considerable quantities of berry fruits are sold to factories and the public for jam-making. The artificially high price of sugar was holding the berry-growing industry back.

The Prosperous Sugar Industry.

A public meeting was held at Inisfail, Queensland, recently. Discussing a proposal to honor the pioneers in the sugar industry, several delegates spoke against the idea of the celebration, because they might do harm in revealing that they had a rich district and were making plenty of money.

ENTOMOLOGICAL STUDY.

The Vice-President of the Federal Executive Council, Senator Daly, who is Minister in Charge of the Council for Scientific and Industrial Research, recently drew attention to the lack of facilities for entomological studies in Australia. No university in Australia had a professorship of Entomology, and only one university (Sydney) had a lectureship in that subject. On the other hand, American universities had flourishing schools of Entomology. There was great need in Australia for more intensive study of Entomology in order to cope with the serious insect pests which affect our primary industries.

There was great need in Australia for more intensive study of Entomology in order to cope with the serious insect pests which affect our primary industries.

CITRUS TREE FUMIGATION.

In the fumigation of a citrus tree, a certain period of time must elapse before there is complete diffusion of the hydrocyanic-acid-gas. Studies on gas diffusion have shown that the scale on some parts of the tree are first exposed to a low concentration of cyanide vapor sufficient to stupefy them, but not high enough to kill, so that they are able to survive the full concentration when the gas is fully diffused.

A high initial concentration quickly distributed to all parts of the enclosed space will give a better kill than the same degree more slowly or imperfectly diffused.

Until recently, the only methods of fumigating in Australia have been the "pot" method and the powdered calcium cyanide method, but there are now being introduced two new fumigants having the HCN gas in a readily available form.

Citrus "Zyklon" is a substance resembling cork dust in appearance, impregnated with liquid HCN. The required dosage is withdrawn by a unique measuring device and simply scattered under the tented tree.

"Cyca" briquettes are a high-gas-content calcium cyanide in the form of briquettes, each of which contains the gas equivalent of ten-twelfths once of sodium cyanide. They are claimed to be easier and safer to handle than any other form of citrus fumigant yet invented, as they do not give off their gas content until ground up and blown under the tree, this being accomplished in one operation by a small machine.

Details will be found of both these products in our advertising columns.

Orange Packing Chart.—The Department of Agriculture, Victoria, has issued a wall-sheet, illustrating the correct methods of packing Oranges in the standard case (inside measurements 18in. x 11½in. x 10½in.).

This wall-sheet is nicely illustrated, and copies are obtainable from Mr. J. M. Ward, Superintendent of Horticulture, Department of Agriculture, 605-7 Flinders-street, Melbourne.

South Australian Fruit Marketing Association

Export Packing Methods.

400,000 or 500,000 Cases Will be Exported in the Coming Season.

IMPROVED PACKING METHODS for South Australian fruit exports were recommended by a sub-committee of the Fruit Marketing Association as follows:—

Case.—It is desirable to pack in Canadian standard case for export. Specification be not less than:—

Inside measurement, 18 in. long, 10½ in. deep, 11½ in. wide.

Ends, 2, 10½ in. x 11½ in. x 11-16ths.

Sides, 2, 19½ in. x 10½ in. x 5-16ths. Top and bottom, 4, 19½ in. x 5½ in. x 3-16ths.

Cleats, 4, 11 in. x ¾ x 5-16ths.

Sides required not to bulge, and be sufficiently thick to protect contents. Two-piece sides not recommended. Lids required to be flexible, so that they will bulge when packed. Suggested that words, "This side up when stacking," to be stencilled on side.

Label.—Wording on labels is to comply with Commerce Act Regulations, and describe grade, size or count, variety of contents. Lettering should read parallel with lid. It is considered advisable that words similar to "urgent with care" or "fruit with care" be printed on labels.

Case Lining.—It is considered desirable to use clean white paper lining preferably to wood-wool or straw-board.

Wiring of Cases.—Resolved that it is essential that all cases be double wired.

Packing.—The South Australian Fruit Marketing Association is urging the South Australian Department of Agriculture to arrange for experts from Victoria or elsewhere to visit districts in South Australia and demonstrate, and tutor South Australian orchardists to pack on "cheek" method.

Delegates are of opinion that "cheek" pack is desirable, and it is hoped all interested will adopt this method, which is uniform throughout the Commonwealth, New Zealand, and America.

Rough Handling of Fruit.—Resolved that growers be not permitted to pick into cases which are later to be exported, so that these be kept clean and attractive.

The necessity of growers handling all fruit with care from trees to ship's side was emphasised, and it is hoped that the Government will take steps so inspectors will enforce pro-

visions of "Rough Handling of Fruit Act."

Monthly Meeting.

The monthly meeting of the Committee of the South Australian Fruit Marketing Association was held at the Secretary's office on Monday, November 4, 1929. Mr. H. J. Bishop (President) was in the chair, and there was a large attendance of members.

Codlin Moth.—Letter was received from Market Gardeners and Fruit-growers' Association, asking that the Government be requested to enforce the Act restricting sale of codlin moth affected fruit. Resolved that a reply be sent, stating that this Association was strongly in sympathy with the growers in their efforts to get the Government to enforce legislation for the suppression of the codlin moth.

Letter from Tasmanian Orchardists' Association, received per the Secretary of S.A. Fruitgrowers and Market Gardeners' Association, respecting increased duty payable in Germany on Australian fruit in comparison with that of America and New Zealand, was discussed. As this matter had received attention some time ago from S.A. Fruit Marketing Association, a letter was sent to the Minister of Markets and Migration, asking for details of progress.

Crop Prospects.—Delegates from various districts submitted reports of crop prospects. It was resolved that the S.A. Fruit Marketing Association advice to Overseas Shipping Representatives' Association that at least 400,000 cases of Apples would probably be exported in 1930, should be confirmed.

If favorable weather is experienced, it is expected by some that this may be increased to 500,000 cases for season.

District Inspection.—Resolved that a letter of appreciation be sent to the Hon. J. Cowan, Minister of Agriculture, for his kind reply to deputation respecting preliminary inspection of Apples for export at packing places in districts.

Resolved that letter be sent to Minister of Agriculture asking whether the Canadian standard export case will be placed on schedule for local use also.

Packing Methods.—A discussion respecting "cheek" and "flat" pack for export Apples followed. It was agreed

that as "cheek" pack was universal throughout Australia and New Zealand and abroad, it was desirable to adopt this method in South Australia also. The very instructive demonstration on "the Better Farming Train" by the Victorian expert was much appreciated, and it was resolved that the South Australian Minister of Agriculture be asked to endeavor to arrange for an extended visit of the Apple packing expert (Mr. Basil Krone) during January, so that orchardists and fruit packers be given an opportunity to become proficient and accustomed to the "cheek" pack before the export season started.

Export of Pears.—After discussion, the Secretary was instructed to write to the Overseas Shipping Representatives' Association, requesting information as to whether a small chamber to be used exclusively for the export of Pears from South Australia could be obtained on mail steamers during February and early March. Prospects of sale locally of big crops of Pears likely to be harvested are not encouraging. A small committee was formed to give attention particularly to the "Pear shipment." It was resolved that if it is possible to obtain suitable chamber, growers will be circularised and arrangements made for shipments of Duchess (Williams) Pears, and also other varieties, under most approved conditions.

SOUTH AUSTRALIA.

At the monthly meeting of the Executive of the South Australian Fruit-growers and Market Gardeners' Association, held on October 25, Mr. W. H. Ind, presiding, it was decided to write to the Prime Minister, urging the necessity for the British Government to grant preference to Empire grown fruits, also that greater efforts be made to extend the export of Australian fruit to the markets in the Near East.

Better Farming Train.—Great appreciation was expressed regarding the Better Farming Train, loaned to South Australia by Victoria. The Better Farming Train, which was complete with objects of an instructive nature to primary producers, was a revelation of high-class organisation. It was hoped that another visit of the train would be arranged.

Mulch Sheathing.—Messrs. Gibbs, Bright & Co., 27 Grenfell-street, Adelaide, direct attention to their "Certainteed" Mulching Sheathing, which conserves soil moisture, prevents weed growth, promotes plant growth, and increases crops. Full details are obtainable from the firm named.

Crop Prospects.

NEW ZEALAND.

A heavy crop of Apples is showing in New Zealand. Mr. J. A. Campbell, Director of Horticulture in New Zealand, issued a report on November 7 from his office regarding marketing conditions, as follows:—

Auckland.—Apples: Good crops showing. Lemons: Damage by frost in October. Crops may be affected. Nectarines: Crops are promising. Peaches: Most varieties are promising well. Golden Queen has suffered from a bad attack of blossom infection of brown rot. Plums (Japanese): Fairly heavy. Strawberries: Prospects good. Tomatoes: Average.—L. Paynter.

Waikato.—Apples: Exceptionally heavy blossoming. Nectarines: Heavy setting. Peaches and Plums: Very heavy setting. Pears: Heavy setting in most varieties. Strawberries: Picking commenced. Fair crop. Tomatoes: Hothouse, well forward; outdoor, slight setback due to cold weather, otherwise looking well.—R. G. Hamilton.

Gisborne.—Apples: Generally heavy setting. Apricots and Gooseberries: Average. Lemons: Average. Nectarines: Patchy. Oranges: Heavy blossoming. Peaches: Heavy. Pears: Heavy. Plums: Average. Plums (Japanese): Heavy.—G. H. McIndoe.

Hawkes Bay.—Apples: Heavy. Pears: Average. Nelis doubtful. Stone Fruit: Average.—N. J. Adamson.

Wanganui.—Apples, Gooseberries, Lemons, Pears, Strawberries, Tomatoes and Walnuts: Average. Apricots, Cherries, Nectarines, Peaches and Raspberries: Light. Plums: Light to average. Apples and Pears: Heavy. Japanese Plums: Good average. Peaches, Nectarines, and English Plums: Medium. Lemons: Very promising. Gooseberries and Strawberries: Fair to average.—H. F. Frost.

Manawatu and Wairarapa.—Apples: Heavy. Apricots: Light. Cherries and Gooseberries: Good average. Nectarines: Light. Pears: Patchy. Plums: Fair setting. Manawatu; light, Wairarapa. Tomatoes: Well forward.—J. W. Whelan.

Nelson.—Apples: Heavy blossoming; indications of good setting. Apricots and Cherries: Very fair. Gooseberries: Good. Nectarines and Peaches: Very fair. Pears: Good. Winter Coles patchy. Plums: Fair to good. Plums (Japanese): Medium. Strawberries: Berries developing; rain needed. Tomatoes: Glasshouses looking well; black stripe causing slight loss; outside plants looking well.—J. H. Thorp.

Motueka.—Apples: Appearance of very heavy crops. Apricots: Good. Cherries: Very good. Gooseberries: Good. Lemons: Fair. Nectarines: Very good. Peaches: Good. Pears: Heavy, with exception of Winter Cole. W.B.C. and Nelis very good. Plums: Patchy. Frost caught Blue Diamonds. Raspberries: Average. Strawberries: Good.—G. Stratford.

Nelson Central.—Apples: Good; heavy fall of bloom in Dunn's Favorite. Apricots and Cherries: Fair. Nectarines: Fair. Peaches: Fair.

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Prompt Settlement.

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Melbourne

Pears: Good. Plums: Fair to heavy crops.—M. Davey.

Marlborough.—Apples: Heavy setting. Apricots: Light. Cherries: Fair to good. Gooseberries: Good. Lemons: Average. Nectarines and Peaches: Fair (frost). Pears: Heavy. Plums: Fair. Raspberries: Very light (bud weevil). Strawberries: Good. Tomatoes: Good showing in glass-houses. Walnuts: Average.—D. J. Hogg.

Canterbury.—A severe frost during the night of 24th inst. (approx. 10 degrees) caused severe losses at Papanui, Styx and Loburn districts of all varieties of fruit. Tomatoes:

Under glass ripening freely; good average. Walnuts: Severely affected by frost.—B. G. Goodwin.

Otago and Southland.—Apples: Heavy blossoming. Apricots: Early varieties practically nil; mid-season and late average crop. Cherries, Peaches and Pears: Heavy. Gooseberries, Nectarines, Plums and Strawberries: Average.—W. K. Dallas.

Central Otago.—Apples: Generally heavy blooming; Jonathan patchy. Apricots: Short. Cherries and Pears: Heavy. Nectarines: Patchy. Goldmine below average. Peaches: Patchy; below average. Plums: Average. Strawberries: Below average. House Tomatoes doing well. Walnuts: Heavy blooming.—W. R. L. Williams.

MARKETING FRESH APPLES IN CHINA.

The New South Wales Fruitgrowers' Federation has issued an extract from a Canadian trade journal, showing the possibilities of the market for fresh Apples in China.

Apples are being imported into China in greater volume every year, and the business is expected to steadily increase. Canadian prices have been 30 to 50 cents per case higher than American.

With Australian Apples available in the opposite season to that of Canada and America, the possibilities of an outlet for Australian fruit would be worth investigating. The present difficulty is that of refrigerated ocean transport to Shanghai.

SOFTWOOD CASES.

The Victorian Fruit Marketing Association is entering a vigorous protest against the request of the sawmillers for an increase of duty on fruit case shooks and the cancellation of drawback. The V.F.M.A. will co-operate with the Dried Fruits and Citrus Associations in this protest.

Spraying.—Messrs. Victor Leggo & Farmers Ltd., 218 Queen-street, Melbourne, direct attention to their spraying compounds, which have won appreciation among practical fruitgrowers. Their "Vallo" arsenate of lead is manufactured in finely subdivided form, is adhesive and contains a spreader. Their other lines include "Vallo" lime-sulphur wash, prepared white oil (for destroying codlin moth eggs and grubs), also nicotine sulphate (the latter is guaranteed to contain 40 per cent. nicotine).

An attractive booklet is obtainable free on request from the head office or from the firm's representatives in the several States.

Queensland Notes

Seasonable Cultural Notes.

AFTER the ground has been properly prepared and suckers selected, plantings of Bananas and Pineapples may be continued. Plantations should be kept free from weeds and well worked.

Very immature Pineapples should not be sent to the southern markets, as these serve to spoil the market for the main crop.

Citrus orchards need to be kept well

worked and weeds destroyed. At the first signs of "maori," the trees should be sprayed with the lime-sulphur, potassium, or sodium sulphide washes, or dusted with dry sulphur.

If needed, the trees should be sprayed with fungicides, and spraying of cyaniding for scale insects should be carried out. A sharp watch should be kept for borer.

Early Grapes should be handled carefully, and put on the market in as good a condition as possible.

During the month, Melons, Plums, Peaches and Papaws will be ready, and growers should see that these are handled properly.

Early ripening stone fruit should not be left lying under the trees to rot, as these would breed a big crop of flies.

Plants on which leaf-eating insects feed should be sprayed with arsenate of lead. Use Bordeaux or Burgundy mixture for Irish blight in Potatoes and Tomatoes, and finely ground sulphur or a sulphide spray for mildew on Melons.

The Granite Belt, Southern and Central Tablelands.

During the month early ripening Apricots, Apples, Peaches, Plums and Nectarines will be ready. The flesh of these is soft and watery, and deficient in sugar and firmness, thus making it impossible to send it to any distant market. The best way to deal with this class of fruit is to clear the markets daily and get it distributed.

Early ripening fruits should be carefully graded for size and quality, and carefully handled and packed. Only choice fruit should be sent to the market.

In order to retain the moisture necessary for the development of the later ripening fruits, orchards and vineyards must be kept in a perfect state of tilth, especially if the weather is dry.

If there is not sufficient rainfall to supply moisture, an irrigation should be given where citrus fruits are grown, and if water is available.

Fruit fly and codlin moth should be looked for and kept under control in order that the later ripening fruits may not suffer from these pests.

Where necessary, Grape vines should be sprayed for black spot or downy mildew, or sulphured for odium. Spraying should be done with potassium or sodium sulphide washes where brown spot appears. Spray with arsenate of lead to keep leaf-eating insects in check.—Queensland "Journal of Agriculture."

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Harcourt Fruit Supply Co. Ltd.
Victorian Central Citrus Assn. Ltd.

Tasmania: State Fruit Advisory Board.
New South Wales: N.S.W. Central Citrus Assn. Ltd.
Batlow Packing House Co-op. Soc. Ltd.

Cherry Trees from Japan.

Strong Protest from Growers Against Importation.

Danger of Fire Blight.

THE reported acceptance by the Prime Minister (Mr. J. H. Scullin) of a gift of 6,000 Flowering Cherry trees from Japan, has been received with misgivings

Minister, from the Secretary of the N.S.W. Fruitgrowers' Federation (Col. E. E. Herrod).

Colonel Herrod, on behalf of the Federation, writes appreciating the kindly thought of Prince Takamatsu, but states that serious risk to the fruitgrowing industry should outweigh any feeling of sentiment. The present embargo is to safeguard orchards against fire blight (*Bacillus amylovorus*), the most destructive of all pomaceous fruit diseases. Once introduced, control would present innumerable difficulties, the cost would be enormous and eradication impossible.

The statement that the trees would be thoroughly fumigated on arrival, and isolated at the Yarralumla Nursery, Canberra, is combated. Fumigation would be ineffective as the disease is within the trees. Isolation is impossible as the action of wind, bees and insects is beyond control. Dr. M. B. Waite, of the U.S.A. Department of Agriculture, pointed out as far back as 1895, that the bacteria multiply very rapidly in the nectar of the flowers, and are then carried from flower to flower by insects.

Further, there is danger of infection by visitors plucking sprays of blossoms and carrying them beyond the isolated area.

Fire blight may appear suddenly and rapidly destroy the industry. Orchard trees could be killed in one season. In the Young, Batlow and Goulburn districts—all within 60 miles of Canberra—there are thousands of acres of Apples, Pears, Plums, and Cherries, all of which are susceptible to fire blight.

In conclusion, Colonel Herrod requests the Prime Minister to reconsider the matter, and to rigidly enforce the present embargo. The seriousness of the disease being known, there would be little likelihood of offence being caused. In fact, arrangements could be made by the Japanese Consul-General for Australian nurserymen to propagate the trees on behalf of Prince Takamatsu, thus solving the whole problem.

He is a man of sense who does not grieve for what he has not, but rejoices in what he has.—Epictetus.

WOOLLY APHIS PARASITE.

The Superintendent of Horticulture for Victoria (Mr. J. M. Ward) states that the abnormal weather conditions experienced during the past two months have been favorable to the development of the woolly aphis pest. The parasite, *Aphelinus mali*, has proved an efficient control in all Apple districts where it has become established. District orchard super-

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Correspondence Invited.

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by fruitgrowers and those connected with Australian commercial horticulture.

The Federal Director of Quarantine (Dr. Cumpston) states that every precaution will be taken to prevent the introduction of disease, particularly the dreaded fire blight.

Growers in the several States have sent protests to the Prime Minister against the importation of the trees.

The case for the fruitgrowers is well set out in a letter to the Prime

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visors have been instructed to take steps to have the *Aphelinus* established in as many orchards as possible in their respective districts.

Apple-growers who have not had the parasite established are advised to make application to the Supervisor in their district, or to the Chief Orchard Supervisor, Department of Agriculture, Melbourne.

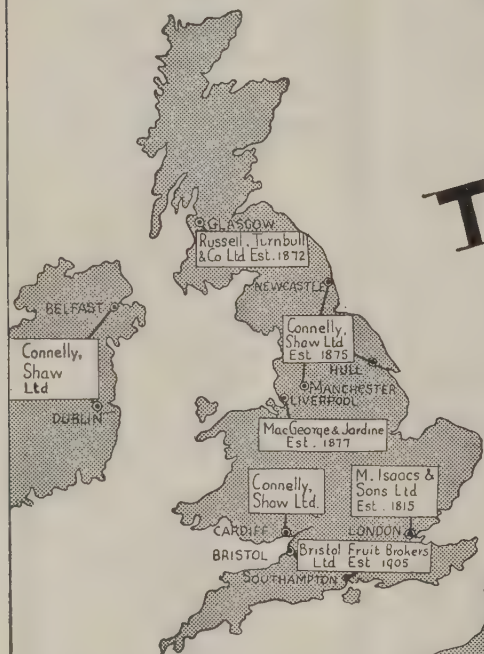
THE THRIFTY SCOT.

Hotel Porter (arousing the guests):
Get up, get up. The hotel is on fire.

MacStinger: All right; but, mind
ye, laddie, I'll no pay for the bed.

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Citrus News and Notes

V.C.C.A.'S NEW MANAGER.

Mr. J. A. Parkes, of South Australia.

A Popular Appointment.

Mr. J. A. Parkes, Secretary of the Murray Citrus Growers' Co-operative Association of South Australia, and prominent for many years as a South Australian citrus and dried fruits grower and executive, has been appointed general manager of the Victorian Central Citrus Association, with which organisation he has been closely associated since its inception.

Mr. Parkes, as a member of the sub-committee appointed by the V.C.C.A. in February, 1922, to consider its marketing plans, submitted the proposals which are the basis of the present marketing scheme and which have remained substantially unaltered to the present day. Mr. Parkes, by this appointment, will, therefore, now have the opportunity of directing the marketing scheme for which he was originally responsible.

He has been a regular attendant, as a representative of South Australia, at every conference held by the V.C.C.A. since its formation, and has become familiar, not only with the problems of the V.C.C.A., but with the wider affairs of the Federal Council, in the creation of which he was one of the prime movers.

The directors consider that the appointment of Mr. Parkes will not only be in the interests of Victorian and border growers, but that, through his long association with South Australian growers, Mr. Parkes will be in a position to influence even closer Federal relations between the various State organisations.

The V.C.C.A. Board of Directors, in announcing the appointment, stated that they had already received assurances that Mr. Parkes' acceptance of the position has met with the warmest approval of individual growers, the accredited agents, and the whole staff of the organisation. Mr. Parkes will take up his duties in Melbourne at the beginning of the New Year.

CO-OPERATIVE CITRUS BUD SELECTION.

Co-operative citrus bud selection is one line of work carried on by the Fruitgrowers' Supply Company of the California Fruitgrowers' Exchange, Los Angeles. Since May, 1927, the

bud selection department has furnished growers with 4,206,283 citrus buds carefully and scientifically selected from superior trees of the best strains of proved commercial varieties. These choice buds are sold to members for five cents each, and to other growers for six cents. The work is carried on as a public service to the citrus industry.

CITRUS IMPORTATIONS.

Will New Government Decide on Prohibition?

In the Federal House of Parliament on November 21, Mr. Francis (Queensland) asked the Minister for Health and Repatriation (Mr. Anstey) whether he would consider prohibiting the importation of citrus fruits into Australia from the United States because of the danger from pests, and also because the United States authorities compelled ships to dump Australian citrus fruits overboard before entering American ports.

Mr. Anstey, in reply, stated: "I will shortly give the honorable member a reply that will be as pleasing to him as will be satisfactory to me."

LEMON CURING.

LEMON CURING forms the subject of an article to hand from the Department of Markets (Canberra), in which it is pointed out that it is better to use secateurs for cutting the fruit than to pick it by hand. Gloves should be worn, and any fruit bruised on the tree should be discarded.

It depends to some extent on the experience of the grower as to the best stage of ripeness at which to gather Lemons to suit the method of curing and storing used by him. It appears that the best stage for export is when the green color is just turning yellow. If the fruit is to be kept for several months it is probably best picked when green. Uniformity in size is an important factor in marketing.

The fruit can be stacked, the fruits not touching one another, in a basement or dark chamber, until the proper condition has been reached. This make take from ten days upwards.

Good results have been obtained in comparatively high temperatures, up to 90 degrees F. In order to prevent the shrivelling of the skin, it is im-

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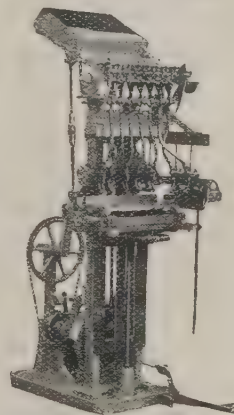
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No Fruit Grower can afford to be without "FLUXIT" in his Spray

No spray is the most efficient scientific spray until the spray water is transformed into a colloidal solution. This is accomplished with "FLUXIT." It "Makes every spray a better spray," at the cost of a few pence per tank.

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- "FLUXIT"— fluxes the spray material to the sprayed surface. It makes the spray go further.
- "FLUXIT"— makes any spray or combination of sprays safer to use.
- "FLUXIT"— gives Nicotine, Lime-sulphur, and Bordeaux sprays a thicker film. It wets better and stays longer. It makes the Nicotine Sulphate more efficient to kill.
- "FLUXIT"— when used with white (summer) oil and arsenate of lead, in combination, makes a much more effective spray than arsenate of lead alone.
- "FLUXIT"— is recommended for use with all white oils.
- "FLUXIT"— largely prevents russetting of fruit with Bordeaux sprays.
- "FLUXIT"— makes the spray wet as it hits—spread as it wets—and stay where it is put.

"FLUXIT"

is a scientific product, prepared from strictly high quality materials, and packed while fresh and keeps in that condition until used. Chemical tests have shown that "FLUXIT" has not deteriorated after 3 years in its original containers.

There is no "FLUXIT" substitute for

"FLUXIT" is not a calcium caseinate. The latter was proved to be deficient three years ago. "FLUXIT" is the only spreader which makes improvement from year to year, and is the result of years of research to make spreader conform to what it should be. A material that will deposit twice the amount of lead and remove it easier than any other spreader or obsolete calcium caseinate. "FLUXIT" is prepared so as to cause every kind of standard spray material to become more efficient.

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portant that the relative humidity of the atmosphere be high. There should be a reasonable amount of ventilation in the curing chamber.

CITRUS TREE PRUNING.

Advice by Mr. Geo. Quinn, Chief Horticultural Instructor, South Australia.

THE PRUNING OF CITRUS trees was dealt with recently, in answer to a correspondent, by Mr. Geo. Quinn, Chief Horticultural Instructor, in the South Australian "Journal of Agriculture." Mr. Quinn writes:—

The best time to prune citrus trees on the Adelaide Plains is considered to be early in September, though dead wood may be cut out at any time of the year.

Orange trees are not opened out into a hollow vase shape as is done

with many kinds of deciduous fruit trees. They are, however, thinned out so that the passage of a certain amount of light and air may enter and circulate through them.

Whilst doing this, care should be taken to maintain a reasonable canopy of foliage all over the tree, so that the supporting stem and branches are not unduly exposed to the sun's rays in summer.

If you can imagine standing under an umbrella, and when looking upwards, all the supporting ribs and handle can be plainly seen, but the cloth shuts out the direct sunlight, you will realise what I mean. The ribs need not be kept absolutely bare of twigs, but only a sprinkling should be left, and these must not be of the nature of rank water shoots, or they will crowd the interior and not carry any fruits.

Lemon trees may be built up much more openly so that the fruiting wood freely persists on the limbs from the centre of the tree outwards. Pruning the Lemon approximates more closely to the method adopted for deciduous trees, but not wholly so. It consists of spreading the outline of the tree into a broad, flattish, curved top instead of a short, round conical form as the Orange usually follows.

A system of thinning out exhausted small branches, which have fruited or bloomed until they become stunted, and encouraging thereby a re-growth of similar wood, gives good-quality fruit. The Lemon tree should bear the bulk of its fruit inside the tree on the laterals situated along the framework branches, whilst the Orange, on the other hand, produces the bulk of its Oranges on the outside canopy portion constituted of terminal twigs.

HE WAS FIRST.

His heart beat fast. Yes, he would do it. No, he would see her personally. Yes, he must do it, and do it now, or his rival might be first. Seizing the 'phone transmitter, he called her number.

"That you, Miss Flutterby?"

"Yes."

"Er—will you marry me?"

"Certainly. Who's speaking, please?"

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Fertilisers—An Investment

THE results of manurial trials on potatoes, carried out at Musk, near Daylesford (*Victorian Journal of Agriculture*, September, 1929), threw into bold relief the investment aspect of an application of 3 cwts. of superphosphate and 1 cwt. of Sulphate of Ammonia. This mixture returned an increase of 96 per cent. in weight of crop, and a cash increase of over £18 per acre. This result is not unusual.

Sulphate of Ammonia

has proved itself a highly profitable adjunct to superphosphate in practically every potato-growing district in Australia.

Sulphate of Ammonia is obtainable from all Fertiliser Manufacturers or their Agents.

Literature from

THE AUSTRALIAN SULPHATE OF AMMONIA PROPAGANDA COMMITTEE
360 Collins Street, Melbourne.

FUNGUS DISEASES.**Muggy Weather Favors Their Development.****Growers Must Be Watchful.**

The Superintendent of Horticulture for Victoria (Mr. J. M. Ward) points out that weather conditions now prevailing are in favor of an outbreak of brown rot (*Sclerotinia*) on stone fruits, and especially on early Peaches. It is therefore advisable that growers of these fruit keep a sharp look-out for the first symptoms of this disease.

The first sign of this fungus is usually a small brown spot appearing on the fruit which, under favorable weather conditions, soon enlarges and may completely destroy the fruit attacked in 24 hours.

Should the presence of brown rot be suspected, an application of lime-sulphur, 1 gallon to 80 gallons of water, should be given at once to the trees, and a later spray with lime-sulphur at 1 in 100 about three weeks

to a month before the fruit is harvested.

Great care should be exercised in handling diseased fruit, as careless handling is likely to further spread the spores of the fungus.

In the case of Apricots being attacked, precipitated sulphur, 8 lb. to 80 gallons of water, should be used instead of the lime-sulphur.

Cooper's Alboleum. — A special white summer spraying oil is manufactured in Australia by the old-established firm of William Cooper & Nephews (Aust.) Ltd. "Alboleum" is the result of many years' research work, the firm having at its disposal the services of chemists of international reputation. Alboleum is suitable for mixing with arsenate of lead. Mr. Percival J. Fryer, F.I.C., an authority on spraying compounds, who in addition to his English experience, has had several years in Australia, states that Alboleum stands right in the front rank of summer spraying oils for effective service to fruit producers.

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By Consigning your
FRUIT to the

Producers' Distributing Society Ltd.

(Late Coastal Farmers' Co-operative
Society Ltd.)

— Agents for —

"BLACK LEAF 40"
and all Orchard Requirements

Melbourne	Sydney
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Soil Cultivation is Essential for Successful Fruit Culture



*Harvey Methods of
Orchard Cultivation*

D. HARVEY

ORCHARD AND VINEYARD
IMPLEMENT SPECIALIST.
FRUIT GRADERS : DEHYDRATORS

Box Hill, Vic.



CODLIN MOTH TESTS

AUSTRALIAN PRODUCT APPROVED

Recent official tests of oils for Codlin Moth control, conducted on Mr. T. Code's orchard, Harcourt, Victoria, resulted in the Victorian Agents for Cooper's "Alboleum" receiving a letter from Mr. C. French, Government Biologist, officially stating that Cooper's "Alboleum" gave results equal to any other oil used in the tests.

This Departmental decision is supported by the owner of the orchard on which the tests were carried out.

"COOPER'S ALBOLEUM"

Is Manufactured in Australia by

WILLIAM COOPER & NEPHEWS (Australia) LIMITED

Manufacturer of the World Famous
Cooper's Sheep and Cattle Dips

COOPER'S "ALBOLEUM" IS OBTAINABLE FROM:—

N.S.W.—

William Cooper & Nephews (Australia) Limited,
Sydney, and Agents.

Victoria—

Cooper Engineering Co. Ltd., Melbourne.

Tasmania—

Bender & Co. Pty. Ltd., Launceston; A. G. Webster & Sons Ltd., Hobart.

South Australia—

Elder, Smith & Co. Limited, Adelaide.

West Australia—

The Westralian Farmers Ltd., Perth.

Queensland—

Queensland Fruitgrowers' Society Ltd., Cleveland, Brisbane.

QUEENSLAND.

A ballot is now being taken in Queensland to decide whether growers are in favor of the continuance of the Committee of Direction of Fruit Marketing. The "Queensland Producer" forecasts a good majority in favor of continuance.

Leaders in the several sectional group Committees are actively working for an affirmative vote. The Minister for Agriculture (Hon. H. F.

Walker) has written advocating co-operative organisation, urging fruit-growers to "stick to their organisation," and settle differences of opinion within the organisation and mould it along lines conducive to the welfare of the industry.

A JUICY MOUTHFUL.

Bjones: "What is worse than biting into an Apple and finding a worm?"
Psmith: "Biting into an Apple and finding half a worm."

FRUIT FLY LURE.

Great Success with a Simple Formula.

A very successful fruit fly lure has been evolved by Mr. H. Jarvis, Government entomologist in the Stanthorpe district.

The lure is easily made, as follows:
1 tablespoonful of Scrubb's ammonia.

1 teaspoonful of essence of Vanilla.
1½ pints of water.

A dessertspoonful of black treacle may be added, but is not essential.

THAT SETTLED IT.

Counsel: Think now, very intently. Concentrate. The whole case hangs upon the destroyed letter. You saw the envelope—steady, now—answer. What did the postmark say?

Witness: Eat more fruit.

COMMONWEALTH LOAN

5¼% at £98

Average Annual Yield £5 14 4%

Persons having either small or large sums available for investment should remember that:—

Idle money means waste; the money should be immediately invested.

There is no safer investment than Commonwealth Loans. Either Stock or Bonds can be purchased, and the purchaser can sell them at any time on the Stock Exchange, if he so desires.

The full amount of the subscription can be paid at the time of application; or a deposit of only 10 per cent. need be made, and the balance paid at any time up to 3rd February, 1930.

Interest is free of STATE INCOME TAX, and runs from the date of lodgment of money.

Full particulars from—

**Banks, Savings Banks, Money Order Post Offices
and Members of Stock Exchanges**

Commonwealth Treasury,
Canberra.

EDWARD G. THEODORE,
Treasurer.

Ship Your Oranges, Lemons, Grapes to New Zealand

All consignments for this market will have careful attention and realize highest prices if sent to

**The Co-operative
Fruitgrowers of Otago
Limited, Dunedin**

Personal supervision of every consignment.

Cheques posted promptly.
Drop us a Line or Cable
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Consignments Solicited.

Sales on Commission by Private Treaty Only.

Liberal Advances Made on Consignments to Cover Cost, Freight, etc.

Victorian Representative:

Fred. J. Andrew, 416 Little Collins Street, Melbourne.

SUBSCRIBERS' PAYMENTS RECEIVED.

We acknowledge with thanks having received, at Head Office, the following new and renewal subscriptions from our readers, from October 1 to November 20, 1929. Except where otherwise stated, the payment credits the subscriber to June, 1930. The list does not include payments to our branches and agents in the other States, nor deliveries through our wholesale distributors. Payments made since November 20 will be acknowledged next month. Subscribers who remitted during the period mentioned above, and are not mentioned below, are asked to advise us immediately.

F. J. Andrews, G. J. Aldwinckle, J. H. Astell, W. G. Ahrens (September, '30), H. Birmingham, F. Byrd, G. Brown, Clements & Marshal, Comino Bros., F. Cleveland (September, '30); V. Cahill (June, '31); W. A. Delves (October, '30); G. Duffell, J. Donaldson, Filsell Bros (June, '31); L. Friend, R. Gregson, A. W. Glenn, Griffith Prod. Co-op. Co. Ltd., G. W. Hedditch, S. Hartwick, G. Higgins, G. A. Hunter, J. W. Harris (September, '30); W. A. Irvine, P. Jacob (June, '30); Estate of the late J. H. Knapstein, D. Kilpin, O. A. J. Leber (October, '30); R. Mair, J. J. Moore (June, '31); A. McCully, A. B. Mark & Berg, F. Pty, A. Philp, C. H. Ragless (June, '32); J. H. Roux, G. Robertson, Sheehan Bros., E. S. Smith, H. St. Clair Smith (September, '30); F. D. Virgo, A. L. Vickers, C. Walker, S. S. Wood (October, '30); P. A. Walpole, H. Wills & Co., A. W. Wallis.

THEN DAD BLUSHED.

"Dad, did you go to Sunday School when you were a boy?"

"Yes, son, regularly—never missed a Sunday."

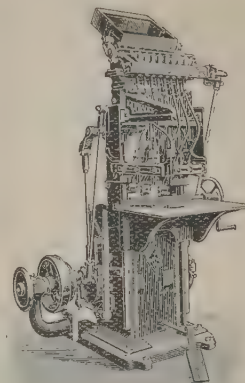
"Well, bet it won't do me any good either."

Favorable comment regarding the research work being conducted at E. Malling & Long Ashton, England, was made by Mr. F. Thomas, M.A., at a recent meeting of Gippsland fruitgrowers.

N.S.W. NOTES. Pure Fruit Drinks.

Some concern has been caused by the published results of a Queensland investigation into the strength of Orange drinks and cordials. It was shown that the percentages of Orange drink varied from nil to ten, whereas, the stipulated standard is 20. This is a very alarming state of affairs, in view of the intense work Victoria and N.S.W. citrus men have done to create a demand for pure Orange drinks. The chemist should not be allowed to trespass on fruitgrowers' preserves, and all associations in the Commonwealth should protest against the wholesale use of synthetic essences for drinks.

N.S.W. men have for years endeavored to prohibit the use of the name of a fruit or an illustration on the label of a container unless the contents are (plus preservatives) wholly composed of the fruit thus named or illustrated. If, by united effort this was achieved, not only would the consumption of fruit be doubled at once, but the general public would benefit in health of body and mind. Surely it can be done!



Bohm & Kruse's

Case Nailing, Case Printing and Shook Splicing Machines which are Time Saving and Profit Increasing.

Keep yourself acquainted with modern developments in machinery. Every new labor-saving device must affect you. If your competitor adopts it, it HANDICAPS you; if you adopt it, it AIDS you.

Particulars will be gladly given by the distributors:

Victoria, South Australia,
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LTD., Collins St., Melb., and
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MESSRS. GOODALL & CO.,
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Factory Representatives:

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Vic. Rep. Consignments solicited * Advances * desired
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Tasmanian Rep. H. JONES & CO. LTD., Old Wharf, Hobart

AN OPEN LETTER

TO EVERY GROWER
OF CITRUS FRUITS

The following claims unreservedly made, without prejudice or bias, are of utmost interest to every grower of citrus fruits. They are based on a thorough knowledge of the product itself and of the present requirements in combating insects so detrimental to plant life.

We believe, and are prepared to prove through direct evidence on hand, that DESTRUXOL EMULSION has back of its manufacture as much scientific study and as true a knowledge of the requirements for such a contact and fumigating spray as any product on the present day market. Years of experimenting have so perfected DESTRUXOL EMULSION that we desire at this time to present the following facts:

DESTRUXOL EMULSION is a STABLE EMULSION containing several distinct ingredients, each of which is a proven insecticide. Although combined, each retains its insecticidal qualification, doing its work efficiently without damage to tree life and retaining its effectiveness over a considerable period.

DESTRUXOL EMULSION contains constituents of organic and vegetable origin which neutralize the mineral oil used, thus protecting tree life from injury through burning. Not only does DESTRUXOL EMULSION eliminate and control Mealy Bug, Red Spider and various species of Scale, but through its chemical action will give new vigor to plant life and therefore a finer and better crop.

DESTRUXOL EMULSION does no damage to blooms or fruits and has the advantage that it may be applied at any time when its power is most effective in the control and elimination of detrimental insects which sap the vitality of trees and stifle their production.

We stand ready at all times to prove any and all of the above statements, to substantiate these claims as to the effectiveness and the neutral functioning of DESTRUXOL EMULSION, through testimonials direct from the grower or by showing groves which have been sprayed over a period of years, and "to place our cards face up" to anyone who may be in doubt through pernicious propaganda.

Further, our research department is always available and will gladly cooperate with any grower towards the proper preservation of tree and plant life and finer and better production

DESTRUXOL CORPORATION

P. S. It will pay YOU to
INVESTIGATE these claims.

H. L. Jonson
President.

Sole Agents.

New South Wales:

Taylor's Produce Co., Pen-
nant Hills and Castle Hill.
Taylor's Limited, Haymar-
ket, Sydney.

Rooty, Hill & Riverstone,
N.S.W.

Northern Districts, Vic.:
Northern Seed & Supply
Co., Bendigo.

Queensland:

E. C. Chambers & Co.,
Edward St., Brisbane.

Agents Wanted:

Write Factory Representa-
tive, Watson House,
Bligh St., Sydney.

Destruxol

STABLE

Emulsion

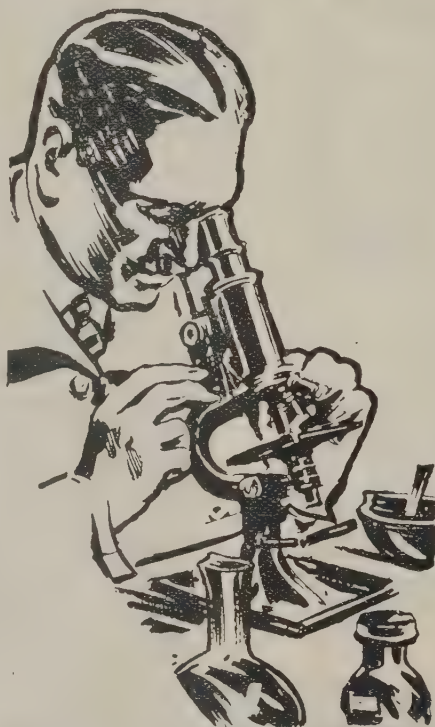
DESTRUXOL CORPORATION,
LOS ANGELES,

Australasian Branch:
WATSON HOUSE, BLIGH STREET,
SYDNEY, N.S.W.



There are many White Oils but only one Volck—

The Proven Spray . . .



The "Journal of Agriculture" (Western Australia), in September, 1929, contains the following:—

"VOLCK, another comparatively new spray in Western Australia, which was tested by the Department of Agriculture last season, gives very good results, being deadly to the aphids and non-injurious to the trees, while it has added advantage in the ease with which it can be mixed. Apply to orange aphids at a strength of 1 in 65. In the test mentioned, VOLCK applied at 1 in 50 in the month of January was very effective, killing red, black and soft brown scale on citrus trees."

VOLCK

VOLCK has justified its makers' claims—in tests conducted in many countries it has been **proven** the most effective spray for all types of orchard pests.

But more important to the Australian Orchardist is the fact that Volck has been tested in this country and **actually proved** by our own experts to be thoroughly efficient in killing all the bugs that attack fruit-bearing trees.

There is no substitute for VOLCK—it is scientifically prepared and possesses all the necessary qualities to enable it to establish a film that penetrates, protects and continues its action for weeks. Hundreds of materials were tried out and rejected as dangerous or ineffective by Wm. H. Volck and his assistants before the oil stock and emulsifying agents for VOLCK were finally discovered.

In the "Journal of Agriculture" (Victoria), in the issue of August, 1928, and September and October, 1929, are to be found reports of the satisfactory use of VOLCK.

The most important pests of citrus trees are Red Scale, Brown Olive or Black Scale, Soft Brown Scale, Indian White Wax Scale, Purple Scale, White Louse, Orange Aphid and Red Mite. Trees infested with one or more of these pests can be made commercially clean with one thorough application of VOLCK.

WRITE FOR FULL PARTICULARS—DO IT NOW

Victorian Agents:—H. C. PANNIFEX & CO., 26 Market Street, Melbourne.

New South Wales Agents:—THE AUSTRALIAN FRUIT & PRODUCE CO., Fruit Exchange, Sydney.

Queensland Agents:—THE AUSTRALIAN FRUIT & PRODUCE CO., Fruit Exchange, Brisbane.

Tasmanian Agents:—W. H. IKIN & SON, Hobart.

South Australian Agents:—SILBERT, SHARP & BISHOP, Rundle Street, Adelaide.

West Australian Agents:—PATERSON & CO., Perth.

FIGHTING INSECT PESTS IN THE ORCHARD.

Black Aphids of Cherry.

These tiny black aphids are probably one of the worst pests of the Cherry. They cluster round the flowers, young leaves and Cherries, causing them to turn black and die. Spray with nicotine sulphate.

Woolly Aphis Parasite.

(*Aphelinus mali*.)

These parasites should be put out into orchards affected with woolly aphis at once. They are now available from the Department of Agriculture, Melbourne.

Apple Root Borer.

These insects are rather more plentiful than usual. It is advisable to spray at once with arsenate of lead before they deposit their eggs on the leaves. Keep ground around trees well worked.

Pear and Cherry Slug.

The greenish slimy larvae of this destructive insect is now appearing in fair numbers on Pear and Cherry

leaves. They eat the epidermis from the leaves, causing same to dry up. Use arsenate of lead, dust trees with soot, lime, dust or Pestend.

Scale Insects.

The young San Jose, Apple mus-sel, red, olive, and other scale insects, are now becoming numerous. Spray thoroughly with tobacco solutions.

Painted Apple Moth.

The tufted caterpillars of this destructive moth are exceedingly numerous, and a sharp look out should be kept for them, especially when the fruit is forming. Spraying with arsenate of lead will keep them in check.

Light-brown Apple Moth.

The small active green caterpillars of this moth are always rather plentiful in orchards, and cause a fair amount of damage, especially to the late varieties of Apples. Spray same as recommended for codlin moth.

Codlin Moth.

After the first two sprayings with arsenate of lead, it is advisable to

use the Volck or any of the other white spraying oils.

Looper Caterpillars.

The grey-colored caterpillars of the looper moth are fairly numerous on Apple trees at present. They are particularly destructive to young Apples. Spray with arsenate of lead, 1 in 25.

Volck Spray.—Messrs. H. C. Pannifex & Co., the Victorian agents for Volck, have been informed that all South African Customs duties on Volck and other products of the same company (California Spray-Chemical Co.) have been removed, thus helping South African growers to compete in the world's markets. South Africa's annual production of Oranges is approximately 1,500,000 boxes, and Australia's about 3,000,000 boxes.

It will be of interest to citrus growers to know that a few years ago 95 per cent. of the citrus groves in Southern California were fumigated. To-day, it is estimated that this is only 48 per cent., the balance being sprayed with Volck and other oils.

Soil Cultivation is Essential for Successful Fruit Culture

Progressive Farmers,

Vignerons and

Orchardists

Use

“HARVEY”

Farming Implements

Write for full particulars of

Horse Drawn Implements
Tractor Implements
Fruit Graders
Dehydrators

To . . .

D. HARVEY

ORCHARD & VINEYARD IM-
PLEMENT SPECIALIST.
FRUIT GRADERS &
DEHYDRATORS.
POWER LIFT TRACTOR FARM &
ORCHARD IMPLEMENTS

BOX HILL, E.11.
VICTORIA.

Agents All States.



Tractor Working the “Harvey” Two-way 16-Plate Power Operated Disc Cultivator, cutting 9 feet.

FRUIT TREE NURSERY REPORTS.

C. J. Goodman, Bairnsdale, Vic.

Judging by reports, the Peach canning position will be quite all right this coming crop, so that with Pears continuing as at present, Apricots and Prunes will go further in the finished dried article.

More and more the tendency is noted of a restriction in the number of varieties being planted in commercial orchards, and this is a move in the right direction for everybody.

C. A. Nobelius & Sons Pty. Ltd., Emerald, Vic.

Apples.—Laxton's Superb and John Standish, two varieties kindly sent to us from a leading Apple-grower in England, who states that they are two promising late varieties on the English market, and becoming great favorites, should be an acquisition to our export varieties. Superb is a cross between Wyken and Cox's Orange; it is larger than Cox's, skin yellow, flushed with crimson, flesh white and crisp, strong grower, and heavy cropper. Standish somewhat resembles Worcester Pearmain, but more brilliant in coloring; it is solid, juicy, and good flavor for an Apple that will keep till October or No-

F. Ferguson & Sons, Hurstville, N.S.W.

Citrus trees, which are one of our main lines, have been in very keen demand, and they have had to carry a number of our other lines on their back. Apples also, particularly Granny Smith, Jonathan, Rome, Democrat, Delicious, and MacIntosh, have been selling well, as also have early Peaches; in fact, all Peaches up to Wiggins time. Apricots, Plums, Prunes, Pears and Roses have been very quiet, and we have found canning Peaches practically a drug on the market.

Hamburg Fruit Market

One of the Best Outputs

for

AUSTRALIAN FRUIT

GUSTAV BEY

Fruit Broker & Importer

Fruchthof, Oberhafenstrasse
Hamburg, Germany

Shipping "BEY" Brand

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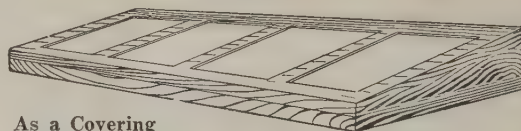
Victoria: I.F.M. Co., 410-414 Flinders-lane, Melb.

Tasmania: H. Claude Little, Tasma House, 85a Collins St., Hobart.

FLEX-O-GLASS

—the new cheaper,
and more effective
material for Hot-beds

etc.



As a Covering
for Hot-beds.

Get a roll of this remarkable fabric to-day! Every day more and more orchardists and gardeners are turning to glass substitutes, for quick results and strong, healthy plants. And when they ask for glass substitutes they ask for **Flexo-o-glass**, because **Flex-o-glass** has the distinction of being the only glass substitute definitely recommended and used by Horticultural Colleges and gardening experts. These experts have experimented with it and found that it is superior in many ways to glass. For instance, it lets the growth-promoting ultra-violet rays filter through. Glass invariably shuts them out. The benefit given to plants by these rays is apparent when it is seen how much bigger, stronger and quicker plants grow when under this fabric. They shoot up quickly and healthily, and you do not lose a single plant when transplanting. Transplanting may be done weeks before the usual time.

Flex-o-glass shuts out both heat and cold. It protects your plants from frosts, insects and the scorching rays of the sun. It cannot break and damage the young seedlings. It cannot tear or crack. The severest weather leaves it unhampered. And it costs little to buy and nothing to instal. Order now—or write for folder giving fuller information.

2/6 a yard. Minimum 3 yds. by post.
36in. wide. Carriage Extra.

Obtainable direct, or from:
Watters & Sons Pty. Ltd., Swanston St.;
James Railton, Swanston St.;
Gill & Searle Pty. Ltd., Elizabeth St.
Ormond Plant Farm Pty. Ltd.

Tear along this line.

**WRITE NOW FOR FREE
FOLDER GIVING FULLER
INFORMATION** F.W.

Just tear off the bottom of this advertisement and post it with your name and address to—

CLARK, KING & CO. Pty. Ltd.
30-32 GUILDFORD LANE, MELBOURNE
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The Clyde Simplex Driers

For Drying
Fruit Vegetables and other Products

NO MORE WASTE FRUIT OR VEGETABLES

Simple - Self Contained

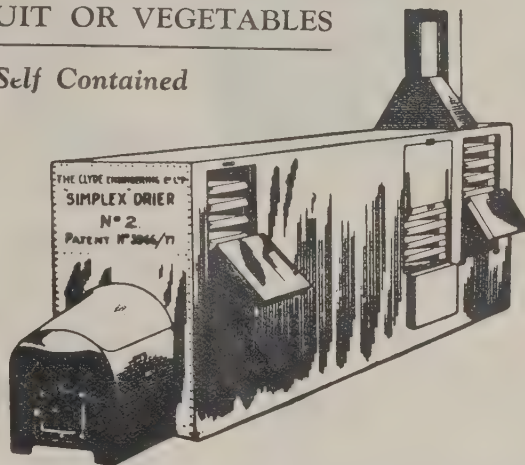
Made in Sizes to Suit

Householders
Small Orchardists

OR

Large Factories

The
Clyde Engineering Co. Ltd.
GRANVILLE, N.S.W.



Co-operative Box Co. of Victoria Ltd.

BOX WORKS: YARRAVILLE AND WARRNAMBOOL

We have the Largest and Best Equipped
Box Factory in Australia.

Fruit Cases of All Descriptions

Out of Imported Softwood.

CANADIAN STANDARDS, BUSHELS, DUMPS, GRAPES, SWEAT BOXES, ETC.

OBTAIN OUR PRICES

IN TRUCK LOADS FROM OUR OWN RAILWAY SIDING.

SPECIAL QUOTATIONS FOR LARGER QUANTITIES

Co-operative Box Co. of Victoria Ltd.

Somerville Road, Yarraville, W. 13.

Telephone: Footscray 285.

Telegrams: Coboxco, Yarraville.



EXTRA EGGS



BY USING KARSWOOD

With almost monotonous regularity the leading men in the public life of the country keep telling us that half our troubles would be solved if we only produced more. "Produce—produce—produce" is their exhortation, and there is a very sound reason behind it. For greater production means reduced costs of production, and it is only by reducing the costs of production that Australia will be able to compete in overseas markets.

And the production of eggs is no exception. If you obtain a greatly increased number of eggs for an infinitesimal increase in cost, you have reduced your costs of production and are thus better able to meet a fall in price if it occurs. And if prices are up, then it is so much extra in your pocket. Karswood Poultry Spice increases egg production to an amazing degree, but it obtains its results in a perfectly natural manner. It does not force, because it contains no forcing ingredients, but gently coaxes the birds to more active laying. A half-pound packet, costing 1/-, supplies 20 hens for 16 days.

"From two eggs to six eggs a day"

Dear Sirs,
I have only 6 Black Orpingtons and 6 White Leghorns in separate pens. From the 6 black hens I was getting only two to three eggs a day before using Karswood Poultry Spice; after using for 11 days I got 6 eggs daily. From the 6 White Leghorns I was getting from 1 to 4 eggs a day; now I am getting 4 to 6 daily, and with eggs at the price now, it is a fine record

KARSWOOD POULTRY SPICE

Increases egg-production without forcing, because it contains ground insects but no cayenne pepper, etc.

for Karswood Spice. Besides producing more eggs, it keeps both hens and chickens in a healthy condition. I believe in Karswood for young chicks, as it is a fine tonic, and encourages growth. I feed my fowls wheat and cracked corn alternate mornings; midday meal consists of green feed, sometimes lettuce and minced lucerne; evening meal, mash, not too soft, with Karswood Poultry Spice. I also give them chopped onions twice weekly, which I believe is a splendid tonic for fowls, and Epsom salts once a week; twice a week I dig a patch of earth for them to get grubs in. In conclusion, let me add that Karswood Poultry Spice is the poultryman's money maker.

(Sgd.) JAMES SMITH,

Cardwell Street, Canley Vale.

Original letter on file for inspection.

Make this Test.

Go to your local grocer, storekeeper, or produce dealer. Get a 1/- packet of Karswood Poultry Spice, then give it to half-a-dozen of your birds, in accordance with the directions on the packet. Do not expect immediate results — Karswood works naturally, not suddenly. It takes at least a fortnight to produce results, but they are good and sure.

Supplies.

Karswood Poultry Spice is obtainable from all wholesalers and stores at the following standard retail prices:
 ½ lb. packet 1/-; 1 lb. packet 2/-; 7 lb. tin 13/-; 14 lb. tin 25/-; 28 lb. tin 48/-.

6 M. 29



MONTHLY REMINDERS.

"Late-hatched chickens under ordinary circumstances are placed in stale quarters and runs, and have not the protection from hot weather which nature demands, but which chickens hatched at a cooler period do not require," says Mr. F. C. Brown, Chief Poultry Instructor, Wellington (N.Z.).

The disadvantages of late hatching can be counteracted to a great extent by placing the chickens in a clean, fresh run which has the advantage of being well shaded.

It is a mistake to conclude that when the young birds have passed the brooder stage they may be left to scratch for their living, and to generally look after themselves.

It is at this time, indeed, that they demand every favorable condition if they are to develop to the best advantage.

Too often they are turned into old quarters or some unsatisfactory building, with no proper provision for cooling off, because all the good houses are occupied by adult stock.

Not only should provision be made for thoroughly clean houses and runs for the growing birds, but, in addition, some hover arrangement should be provided which will give them the desired seclusion to which they have been accustomed.

In this way the chickens will be discouraged from huddling in corners, as they invariably do if taken direct from a brooder to an open-fronted house, where no special sleeping quarters are provided.

Huddling should be prevented at all costs, as the sweating thereby induced is a common cause of chill, and inevitable mortality.

A good sleeping arrangement can be made by having the perches, three or four in number, arranged, say, one foot from the ground, and a similar distance apart.

These should be covered with grain-sacks, but care should be taken to keep the ends of the sacks about 3in. above ground level to enable the chickens to secure the necessary fresh air.

After the first few days, and as the chickens grow older, the spaces between the sacks should be gradually opened wider as a means of allowing any bad air to escape, and at the same time of effecting the hardening-off process by degrees.

Care should be taken for the first night or two to see that the chickens go under the hover, and do not crowd in corners, as it is unusual for them to take shelter on their own account.

Trouble may be minimised in this respect if the chickens are placed under the hover when it is dark.

The corners of the house should be rounded off with fine-mesh wire-netting, so that in the event of the chickens finding their way to the corners they will be prevented from crowding against the walls, which is often responsible for heavy mortality taking place.

Grass hay should not be used for bedding down chickens of any age, as this is apt to heat and bring about a sweated condition.

It is extremely important that chickens should not be compelled to sleep under damp or moist conditions.

In order to prevent dampness as far as possible, it is a good plan to place under the bedding material a piece of ruberoid or similar material until such time as the chickens take to the perches.

"The Australasian Beekeeper"

The leading Bee Journal in the Southern Hemisphere.

A monthly magazine entirely devoted to beekeeping. Published in Australia for Australian Conditions. Subscription (5/- per year, prepaid, post free), may start now.

Free sample copy available on application to the publishers, Pender Bros. Ltd., Box 20, West Maitland, N.S.W.

BEEKEEPING.

IN order to prevent honey from souring, it should be heated for a few minutes shortly after being extracted from the combs, to a temperature of 160 degrees Fahrenheit. In this way, the organisms present in the honey which may bring about

fermentation are destroyed. If a thin film of liquid begins to appear on the top of honey which has been stored in the granulated form, this honey is almost sure to start fermentation.

If, just as the fermentation begins, honey can be heated to 160 degrees Fahrenheit, the honey can be saved

without having any of the acid flavor found in fermented honey.

Honey should be heated to 160 degrees Fahrenheit before it is transferred from storage cans to retail packages of either glass or tin. This is done in order to prevent fermentation, also to prevent regranulation in a short time.

New Seedling Apple.

Cox's Orange — Delicious Cross.

This New Variety "Delco," Originated in New Zealand.

A VALUABLE NEW APPLE is reported from New Zealand. The name is "Delco," and it is a cross between Cox's Orange Pippin and Delicious. Mr. J. H. Kidd, of Greytown, contributes the following notes in the "Orchardist of New Zealand":—

This apple is one of two seedlings raised as far back as 1912 from seed of a Delicious Apple, which had been cross-fertilised by Cox's Orange Pippin pollen. The stamens were cut away from the blossom just before the flower opened, and the pollen was applied with a small brush to this pistil. The blossom was then covered with a paper bag to prevent foreign pollen being taken to the flower until the fruit had set.

The seedling was grown in its own roots till 1916, and as it then showed

no signs of fruiting, a graft was put on to a fruiting Cox's Orange in the hope that it would come into earlier bearing. However, it was not until 1924 that the grafted branch flowered for the first time, and developed a few fruit on the upper portion of the limb, which had in the meantime grown very strong, and quite out of proportion to the rest of the Cox tree upon which it was grafted.

All the grafts and buds which have been used for propagating, have been taken from the fruiting portion of the grafted limb, and the worked trees have come into very early bearing, in striking contrast to the time taken by the seedling itself. The growth of this new variety is quite distinct from either of the parent varieties.


Though the wood is nearly as dark

as the Delicious, the leaves are more like the Cox in shape, but are tougher, and seem to stand up to the same spray schedule as Delicious. The tree is

a good strong grower, and makes plenty of lateral growth. It flowers about the same time as Delicious, and the blossoms are strikingly distinct and somewhat like Delicious, only larger, and have a very large supply of pollen.

The fruit, which matures just after the Cox, is very highly colored, of fine quality, and has a distinct flavor which favors the Cox more than the Delicious.

It is not quite as sharp as the former, however, nor is it quite so juicy, but much firmer in consequence. The flesh is of good texture and much



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Good Crops

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Geo. Lister Pty. Ltd., representing some of the leading houses in the British and Continental fruit trade, desires to inform growers of Apples, that they are prepared to receive on consignment or will purchase Apples for the United Kingdom, Denmark, Sweden, Holland, Germany and Norway.

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is in operation at the Company's works, Ingles-street, Port Melbourne. The penetration of the lethal gases is complete, without opening cases or cartons. Further, the goods are in no way harmed. Full information is contained in a descriptive booklet obtainable free on request. This contains report of demonstration on September 4, before Federal and State Government officials.—Write for your copy now.

The Hydro Vacuum Fumigation Co. Ltd., officially registered as a Quarantine Station by the Plant Quarantine Department. Works: Ingles-street, Port Melbourne. Office: Temple Court, Collins Street, Melbourne, C.I. Phone: Central 2670.

better color than Delicious, and the core is entirely free of the rot, as the calyx tube is closed. In shape and markings the Apple is more

like an improved Delicious with the golden ground color of the Cox. Having a skin similar in texture to the Delicious, the fruit stands up well to handling.

The variety would be well described as good halfway between its parent varieties. Some of the fruit held in cool store experimentally this season, opened out in good condition

after nearly four months' storage. A few Apples developed bitter pit, which was not surprising with fruit from young trees of a variety with Cox parentage.

FIGHTING THE FRUIT FLY.

Activity in Western Australia.

COMMUNITY SPRAYING to combat the fruit-fly was recently organised by Mr. Chas. Simons, Orchard Inspector, at Gosnells.

W.A. Green's fruit fly bait was used, this having been found to be effective.

Maddington, Gosnells and Kelmscott were the districts covered by the spraying, over 90 per cent. of the growers within that area going into the scheme. Trees carrying fruit sufficiently developed for the fruit fly to use as a depository for eggs were sprayed, and a proportion of all the Lemon and Orange trees were also sprayed, the idea being to bait the likely feeding places of the fly.

A count was kept of the trees sprayed each time in every orchard, and a record of the time taken in spraying.

In 15 months, 137,843 trees were baited, at a cost of £229/10/-, or approximately 3ths of a penny per tree. —"Journal of Agriculture," W.A.

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CLENSEL

A Wonderful Insecticide and Fungicide. Clensel is not a new spray. It is used extensively throughout the world, and has

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The Fruit Trade

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Andrew, Fred J., 416 Lit. Collins St.
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Millis, A., & Sons, Western Markets.
Mister, G., Western Market.
Mumford, J. G., 449 Flinders Lane.
Fang & Co. Ltd., H. L., Little Bourke
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Producers' Dist. Society, Western
Market.
Ross, J. W., Western Market.
Silbert, Sharp & Davies, Western
Markets.
Stott & Son, T., Western Markets.
Tim Young & Co. Pty. Ltd., Western
Market.
Vear, F. W., 49 William Street.
Woolf, G., Western Market.
Wholesale Fruit Merchants Assn., J.
D. Fraser, Temple Court, 428 Col-
lins St., Melbourne.

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HOLLAND.

Amsterdam and Rotterdam.

Algemeene Vruchten Import, Maats-
chappy.

DENMARK.

Copenhagen.

Kobenhavns Fugtauktioner.

Overseas Markets.

GREAT BRITAIN.

Prices recorded in the "Fruit, Flow-
er and Vegetable Trades Journal" of
October 12, are as follows:—

London (Covent Garden).—Apples.
—Worcester Pearmain, selected, 16/-
to 17/- per bushel; cooking Apples,
3/- to 7/-; California Gravenstein,
11/- to 12/-; British Columbia,
C.O.P., 16/- to 22/6; American York
Imperial, 20/- to 25/- per barrel;
Nova Scotia Gravenstein, 12/- to
18/-. (Spitalfields).—Apples—Bram-
leys, 4/6 to 6/- per bushel; Nova
Scotia Ribston, 19/- to 22/- per bar-
rel; Gravenstein, 12/- to 21/-.

Glasgow (October 10).—American
Jonathans, 16/6 to 17/- Graven-
stein, 14/- to 15/- per bushel; barrels,
York Imperial, 24/- to 28/- (barrel).
Oranges—California Sunkist, 15/- to
20/- per case; California Pears, B.
Hardy, 13/6 to 14/6 half box; Winter
Nelis, 24/- to 25/- per case; 13/- to
14/- half box.

Hull (October 9).—Auction sale
room. Almeria Grapes, average 12/-
to 14/- per barrel; Sunkist Oranges,
21/6's, 18/6 to 19/-; 25/2's, 15/6 to
16/-.

Liverpool (October 9).—Apples—
English, 3/6 to 6/- per bushel; Nova
Scotia Gravenstein, 18/6 to 21/- per
barrel; King David, 21/- to 30/-; Vir-
ginia Apples, York Imperial, best
26/- to 32/6; others 12/- to 25/-.

Manchester (October 8).—Graven-
stein, boxes, 12/- to 14/-; King
David, 14/- to 16/-; Cox, 23/- to 25/-.

Australasian Markets.

NEW SOUTH WALES.

Sydney (28/11/29).

Apples.—Tasmanian, dessert, Demo-
crats, 17/- to 24/-; Croftons, 14/- to
21/-; Sturmers, 8/- to 15/-; French
Crabs, 8/- to 16/-; Victorian, Yates,
18/- to 22/-; local, Granny Smiths,
15/- to 27/-; Allsopps, 4/- to 15/- per
bushel case. Apricots, 1/- to 10/-
per half-bushel case. Asparagus, 6/-
to 15/- per doz. bunches. Bananas
(genuine grades).—Special, 28/- to
30/-; choice, 22/- to 27/-; standard,
17/- to 22/-; plain, 12/- to 16/-; in-
ferior, 10/- to 12/-. Cherries, 5/- to
8/-; special, to 10/- per quarter-
bushel case. Citrus Fruits.—Lemons,
extra choice, 22/- to 25/-; choice,
18/- to 20/-; medium, 14/- to 16/-;
small, 10/- to 12/-; irrigation, colored,
18/- to 28/-; Victorian, to 24/-; Man-
darins, extra choice to 20/-; choice,
14/- to 18/-; medium, 10/- to 12/-;
small, 5/- to 8/-; Oranges, Valencias,
extra choice, 18/-, few 20/-; choice,
14/- to 16/-; medium, 10/- to 12/-;
small, 6/- to 8/-; irrigation, 12/- to
16/-; Common, choice, 16/- to 18/-;
medium, 10/- to 14/-; small, 6/- to
8/-; second crop, 4/- to 8/- per case.
Gooseberries, 4/- to 6/- per quarter-
bushel case. Mangoes, 10/- to 14/-
per bushel case. Passion Fruit, 5/-
to 16/-; extra choice, to 25/- per half-
case. Peaches, 4/- to 16/- per half-
bushel case. Paw Paws, 10/- to 15/-
per case. Pineapples.—Queens, 12/-
to 23/- per case. Plums, 2/- to 12/-
per half-bushel case. Strawberries.—
Local, 9/- to 18/- per dozen punnets.
Tomatoes.—Queensland, 3/- to 8/-;
Northern Rivers, 4/- to 8/-; repack-
ed to 12/- per half-case.

SOUTH AUSTRALIA.

Adelaide (21/11/29).

Fruit.—Apples (eating), 18/- to
20/- a case; do. (cooking), 18/- to
19/-; Apricots, 20/-; Bananas, 30/- a
crate; Cherries, 11/- a half case;
Gooseberries, 9/- a case; Lemons,
20/-; Loquats, 8/- to 10/-; Almonds,
11/- a dozen lb.; Brazil Nuts, 13/-;
Coconuts, 4/- a dozen; Peanuts, 11/-
a dozen lb.; Walnuts, 11/-; Barcelona,
12/-; Oranges (Common), 16/- to
18/- a case; do. (Navel), 20/-; Pine-
apples, 20/- a crate, Strawberries, 9/-
a dozen lb.

QUEENSLAND.

Brisbane (22/11/29).

Local Fruit.—Oranges, Tambourine,
18/- to 22/- a bushel case; local, col-
ored 10/- to 13/-, green 5/- to 7/-;
Lemons, 8/- to 10/- a quarter-case;

Mangoes, Bowen and Townsville, 5/- to 8/- a case; Passion Fruit, 10/- to 12/- and 5/- to 6/- a quarter-case; Papaws, Orange cases, specials 8/-, others 4/6 to 7/6, dumps, specials 6/- to 7/6, others 3/- to 5/- and 1/- to 3/-; Pineapples, smooth 10/- to 14/- a case, rough 11/- to 15/-; Rock Melons, 5/- to 18/- a dozen; Stanthorpe Cherries, specials 16/-; others 14/- to 15/- a quarter-bushel box; Strawberries, 6/6 to 7/- a dozen boxes; Apricots, Warwick, 8/- to 18/- a half-bushel box, Stanthorpe, 16/-; Peaches, local 3/- to 6/- a small tray, 10/- a quarter-case, Warwick and Stanthorpe, 9/- a half-bushel box; Plums, local, 7/- a small tray.

WEST AUSTRALIA.

Perth (23/11/29).

Apples.—Dunn's Seedlings, 17/-; Rome Beauty, dumps, 11/- to 15/6; Yates, 11/- to 20/- (others from 6/-); Granny Smith, 18/- to 21/-; Doherty, 8/- to 4/-; other varieties, 6/- to 14/6. Citrus.—Oranges, plain, flats, 5/- to 15/-; dumps, 8/- to 16/-; Navel, 7/- to 12/-, 10/- to 18/- (others from 8/-). Lemons, 3/- to 8/6 (special to 13/-). Stone Fruit.—Peaches, half cases, 3/- to 10/-; flats, 9/- to 15/- (inferior from 5/-); Apricots, half cases, 3/- to 8/9; flats, 6/- to 15/- (special to 19/-, others from 4/6); Plums, three-quarter cases, 10/-; Cherries, trays, 8/6 to 19/6 (larger trays to 25/-, others from 7/-); Loquats, 6/- to 19/-.

VICTORIA.

Melbourne (2/12/29).

Apples, good to choicest eating, 13/- to 18/-; cooking, 10/- to 14/-; Apricots, colored, 6/- to 10/- half case, few special higher; Green Bananas, Queensland, special, 27/- to 28/-; choice, 25/- to 27/-; standard, 21/- to 25/-; plain, 14/- to 20/- per double case; Cherries, good to choice, dark, 12/-; do., light, 9/- per half case, a few specially good higher; Gooseberries, 9/- to 12/- per case; Lemons, 10/- to 18/-; few specials higher, per case; Common Oranges, average quality, 10/- to 16/-; best quality to 24/-; few extra special higher; Navel Oranges, to 23/-, and a few special brands higher; Pineapples, Queens, 13/- to 20/- per double case; Pawpaws, average, 9/- to 12/-; choice, to 15/-.

The Melbourne representative of the Federal Citrus Council reports that prices were as follow:—Valencias, shed pack, standard average, best counts, to 14/-, few 15/-; choice,

to 20/- and 22/-; selected, to 26/- and 27/-, few to 28/-; Navel Oranges, few, choice, best counts, to 22/-; selected, to 26/-; Lemons, best packs, medium sizes, 18/- to 22/-; lower grades, 11/- to 12/-; Grape Fruit, few, medium grade, 16/- to 20/-; according to count; special, medium sizes, from 25/-.

NEW ZEALAND.

Dunedin (14/11/29).

Apples.—Delicious, 16/-, 18/6; Rome Beauty, 13/-; Sturmers, 14/-, 17/-; Democrats, 10/6, 14/-; cooking, 10/6; Canadian Jonathans, 22/6. Desert Pears.—Winter Coles, 10/6, 14/6; Winter Nelis, 10/6, 14/6. Passions.—Australian, 27/- American Grapes, 26/- Pines, 27/- American Valencias, 45/-; Australian Valencias, 28/- Lemons, 80/-; Australian choice, 38/-, New Zealand, 25/- Grape Fruit, 45/- Bananas, ripe, 30/-; Coconuts, 18/-.

INTERSTATE FRUIT FREIGHTS.

Steamer Reduction of 5d. per case.

Advice is to hand from Esmond Russell Pty. Ltd., of 395 Collins-street, Melbourne, to the effect that the Interstate Steamship Owners' Association have decided to reduce the freight on deck or 'tween deck fruit to Brisbane, from 43/- to 35/-, which will mean a saving of about 5d. per case.

VICTORIAN APPLE EXPORT COMPETITION.

Colombie Cup.

In order to further encourage Victorian fruitgrowers to improve their export pack, and so obtain better prices, Mr. H. G. Colombie and his overseas principals instituted a new competition in 1928, in which every Victorian exporting grower participated. A marked improvement was noted, but to encourage still more advancement, this competition will be revived during the 1930 export season.

The 1928 winner of the competition was Mr. R. E. Fowler, of Pomonal, who is determined to do his utmost to retain the guardianship of the handsome challenge cup, and as numerous growers are equally determined to dispossess him of the title, there is every reason to believe that further improvements in the Victorian pack will be noted in 1930.

The competition was not held in 1929, because of the failure of the

crop. The conditions for the 1930 competition will be identical with 1928, when Mr. J. M. Ward, the Superintendent of Horticulture, was good enough to supervise the judging by his officers, which took place during the whole of the export season.

The maximum points (shown in brackets) to be awarded are as follows:—

External Appearance of Case.—Timber (10), labelling or stencilling (10), wiring (5).

Internal Presentation of Fruit.—Wrappers (10), if printed (if plain 5 points), correct height (5), alignment (5), compactness (5).

Wrapping (10).

Grading.—Uniformity of size (10), uniformity of color (10).

Quality and freedom from blemish, 20.

Total, 100 points.

Points will be awarded on every shipment, and the grower whose exported fruit will, at the end of the season, average the highest number of points, will be declared the winner, and will hold the cup until the following export season, in addition to receiving a small replica of the cup.

The prizes are as follows:—

(1) A handsome cup to be held for 12 months by the grower having secured the highest number of points during the shipping season. (2) A small replica of the cup, to become the absolute property of the yearly winner.

The large competition cup will become the absolute property of any grower who wins the competition three times, not necessarily consecutively.

No fee will be charged, and all Victorian Apples exported and however shipped, whether sold outright by the grower or exported on consignment to anyone, will participate in the competition; all that is required, is that Victorian growers pay special care and attention to the grading of their fruit, the appearance of their cases, and the presentation of their fruit. It is desired to place the pack on the same high plane of excellence as the other best overseas packs.

NEWS IN BRIEF.

The South Australian Fruit Marketing Association is impressed with the need for using "Canadian" standard case for the export of Apples.

A nice compliment has been paid to the Victorian fruit packing expert, Mr. Basil Krone, in that the South Australian growers are seeking his services for instruction in fruit packing. South Australia wants to "borrow" Mr. Krone for a term.

Oil Spraying.

Effect on Deciduous Fruit Trees. Earlier Blossoming is Noticed in California.

EXPERIMENTS in the spraying of deciduous fruit trees were recently carried out in California. The tests conducted by Mr. H. A. Weinland, of the Agricultural Extension Service, are reported in the "Pacific Rural Press," as follows:—

With the increasing use of oil sprays on deciduous fruit trees, have come many observations of peculiar results in the effect on the trees sprayed. Enough observations have been made of this peculiar phenomenon that it cannot be denied that under the conditions which have occurred in Sonoma county, California, during the past three or four years that certain deciduous fruit trees, particularly the Prunes, Cherries and Pears, when sprayed with the ordinary oil emulsion during the latter part of December and the early part of January, have bloomed ahead of trees not so sprayed.

That the factor of time at which the spray was applied is important seems to be rather positive. While some exceptions have been noted, the

month of December (June in Australia), and the first part of January (July in Australia), have been the periods during which the greatest reaction has resulted. During the season of 1928 many growers reported a difference of a week to possibly ten days' advance in the blooming of oil-sprayed Prune trees. The blooming season of 1929 just past has not shown, on the average in Sonoma county, quite the same difference though three to five days' advance bloom on oil-sprayed trees has been commonly observed.

The effect of the oil spray appears to be localised; that is, that the spots or parts of the trees touched only spots affected.

The first test involved painting alternate spurs of a small fruit-bearing twig with a diluted oil emulsion of equal strength to that used in orchard sprays. The spurs which were painted with the oil emulsions bloomed several days ahead of the spurs not so touched.

In the case of the second test, a two-foot section of a large branch on a Prune tree was covered with a sack prior to the time when the tree was sprayed. Removing the sack the bulb of a thermometer was waxed into the sapwood of that portion which had been protected by the sack and also on an adjoining limb which had not been protected. For a period of about two weeks following this oil application, on days that were sunny and warm, readings during the middle of the day showed a difference in temperature of 6 to 8 degrees. The thermometer in the sprayed portion showed the temperature above the one in the unsprayed. This would indicate that possibly one of the causes for the trees blooming early is a warming up effect following the oil spray.

"Mum, the parson's coming. I just saw dad lock the parrot in the woodshed."

MUST HAVE RAINED.

Flossie: "How did you like Venice?"
Clara: "Not much. We only stayed a few days. The place was flooded!"

Clean Trees - Bigger Yields - Bigger Profits

Citrus "Zyklon" or "Cyca" Briquettes

THE IMPROVED FUMIGANTS will do this

CITRUS "ZYKLON" IS LIQUID HYDROCYANIC ACID GAS in a handy portable form. "CYCA" BRIQUETTES are a high-gas-content Calcium Cyanide in tablet form. Both are bought, sold and used on their guaranteed HCN gas content. A quick, high concentration is essential for successful citrus fumigation.

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